Volume II of V, Appx1848 to Appx6653
No. 23-1922

In the
United States Court of Appeals
for the Federal Circuit

BEARBOX LLC, AUSTIN STORMS,

Plaintiffs-Appellants,

v.

LANCIUM LLC, MICHAEL T. McNAMARA, RAYMOND E. CLINE, JR.,

Defendants-Appellees.

Appeal from the United States District Court
for the District of Delaware, No. 1:21-cv-00534-GBW-CJB
The Honorable Gregory B. Williams

CORRECTED JOINT APPENDIX

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(ii) economic dispatch revenue through arbitrage. *See*, *e.g.*, LANCIUM00028482, LANCIUM00033064, LANCIUM00033065, LANCIUM00030838, LANCIUM00028485, LANCIUM00033062, LANCIUM00024122, LANCIUM00033055, LANCIUM00033240, LANCIUM00030839 (spreadsheet attachments LANCIUM00030840, LANCIUM00030841, LANCIUM00030842), LANCIUM00030782, LANCIUM00033215, LANCIUM00024173, LANCIUM00029321, LANCIUM00018672. Lancium also continued to innovate its software-controlled fast ramping (*e.g.*, operations control), overall system design (*e.g.*, site layouts), and high-heat tolerance modular containers (e.g., scope changes; panel design; structural design; 2MW module designs issued for construction; 4MW V-box iterations; miner density designs; demo box reconfiguration plans; removal of evaporative cooler). *See*, *e.g.*, LANCIUM00019208, LANCIUM00019212, LANCIUM00019217, LANCIUM00019222, LANCIUM00019227, LANCIUM00019125, LANCIUM00019130, LANCIUM00019139, LANCIUM00019143, LANCIUM00019151, LANCIUM00019155, LANCIUM00018898, LANCIUM00018904, LANCIUM00025517, LANCIUM00025518, LANCIUM00025419, LANCIUM00025420, LANCIUM00025496 LANCIUM00019105, LANCIUM00019109, LANCIUM00019116, LANCIUM00019124. Additionally, Lancium worked with stakeholders and hired a consultant to analyze, develop, and advance the regulatory and protocol exemptions and changes that would be necessary to integrate its fast-ramping load technology into the ERCOT power grid. *See*, *e.g.*, LANCIUM00034586, LANCIUM00034587, LANCIUM00033660, LANCIUM00033662, LANCIUM00033672, LANCIUM00033656, LANCIUM00034755, LANCIUM00033645, LANCIUM00033648, LANCIUM00033628, LANCIUM00033632, LANCIUM00033629, LANCIUM00033617. Lancium also continued discussions with GlidePath for operation of a third-party datacenter container at a GlidePath site served by Lancium power skids and under

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

BEARBOX LLC and AUSTIN STORMS, Plaintiffs, v. LANCIUM LLC, MICHAEL T. MCNAMARA, and RAYMOND E. CLINE, JR., Defendants.	)	C.A. No. 21-534-MN-CJB

DEFENDANTS LANCIUM LLC, MICHAEL T. MCNAMARA, AND RAYMOND E. CLINE, JR.'S OPENING BRIEF IN SUPPORT OF THEIR MOTION TO DISMISS COUNTS V AND VI OF THE SECOND AMENDED COMPLAINT

Dated: March 16, 2022

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I. INTRODUCTION

Despite having a second bite at the apple, Plaintiffs BearBox LLC ("BearBox") and Austin Storms' ("Storms") (collectively, "Plaintiffs") re-pleaded conversion claim (Count V) and unjust enrichment claim (Count VI) both still fail as a matter of law. Indeed, Plaintiffs' unjust enrichment claim is still precluded by the availability of other remedies for the alleged conduct. And Plaintiffs' conversion claim does not—and cannot—allege a necessary element of conversion: that Plaintiffs were deprived of use or possession of tangible, movable property. Accordingly, the Court should dismiss Counts V and VI of Plaintiffs' Second Amended Complaint, with prejudice.

II. PROCEDURAL HISTORY

On April 14, 2021, Plaintiffs filed their original Complaint against Defendants, which included seven counts asserting claims for: (1) correction of inventorship for U.S. Patent No. 10,608,433 ("the '433 patent") to list Austin Storms as the sole inventor; (2) an alternative claim for correction of inventorship for the '433 patent to list Storms as a co-inventor; (3) conversion; (4) unjust enrichment; (5) trade secret misappropriation under the federal Defend Trade Secrets Act; (6) trade secret misappropriation under Texas state law; and (7) negligent misrepresentation. *See* D.I. 1. On May 3, 2021, Defendants filed their Answer and Counterclaims disputing each of Plaintiffs' claims and asserting several affirmative defenses and counterclaims, including that Plaintiffs failed to state a claim for trade secret misappropriation. *See* D.I. 13.

On May 24, 2021, in lieu of answering Defendants' Counterclaims, Plaintiffs filed an Amended Complaint ("First Amended Complaint"). D.I. 19. The First Amended Complaint withdrew Plaintiffs' trade secret counts, but maintained Plaintiffs' other claims. On June 28, 2021, Defendants filed their Motion for Judgment on the Pleadings seeking dismissal of Plaintiffs' claims for conversion, unjust enrichment, and negligent misrepresentation. D.I. 32. On January 18, 2022,

Your Honor issued his Report and Recommendation ("R&R") recommending granting Defendants' Motion, but allowing Plaintiffs leave to attempt to re-plead their unjust enrichment and conversion claims. D.I. 92. On February 2, 2022, Judge Noreika adopted the R&R. D.I. 97. On February 16, 2022, Plaintiffs then filed their Second Amended Complaint, which not only attempts to re-plead conversion and unjust enrichment but also attempts to reintroduce the Trade Secret Counts. *See* D.I. 103. On March 3, 2022, Lancium filed its Motion to Strike the Trade Secret Misappropriation Counts in the Second Amended Complaint ("Motion to Strike," D.I. 111). Briefing on the Motion to Strike is now complete and that motion is pending.

III. SUMMARY OF ARGUMENT

1. Plaintiffs' unjust enrichment claim should be dismissed because other remedies are available for the alleged conduct, which precludes this claim.

2. To the extent Plaintiffs' unjust enrichment claim is based on Defendants' alleged use of non-confidential information, it is preempted by federal patent law and should be dismissed.

3. Plaintiffs' conversion claim should be dismissed because Plaintiffs have not alleged—and cannot allege—that they were deprived of use or possession of tangible, movable property, which is a necessary element of conversion under Louisiana law.

IV. CONCISE STATEMENT OF THE FACTS

On February 13, 2018, Lancium filed a patent application, for which McNamara and Cline are inventors, that published as WO 2019/139632 A1 (the "'632 application"). D.I. 23 at Counterclaims ¶¶ 9-10; D.I. 26 ¶ 10. The '632 application is titled "Method and System for Dynamic Power Delivery to a Flexible Datacenter Using Unutilized Energy Sources" and explains that, for example, its inventions are useful for "[b]lockchain miners" because "[t]he intensive computational demand of blockchain applications makes the widespread adoption of blockchain

technology inefficient and unsustainable from an energy and environmental perspective. D.I. 23-1 at Cover, ¶¶ 19-20.

In May 2019, more than 14 months after filing the ’632 application, McNamara attended an industry conference where he met Storms. D.I. 103, ¶¶ 33-34; D.I. 23, at Answer ¶ 32. Plaintiffs allege that Storms then told McNamara about “BearBox’s technology” that purportedly “generally relates to an energy-efficient cryptocurrency mining system and related methods that reduce the inefficiency and environmental impact of energy-intensive mining operations by better utilizing available energy resources to increase the stability of the energy grid, minimize a mining operation’s impact on peak-demand, and also alleviate energy oversupply and undersupply conditions.” D.I. 103, ¶ 2. Storms alleges that he communicated with McNamara about “BearBox’s technology” through “conversations, emails, and text messages,” including a conversation at a dinner (D.I. 103, ¶ 33) and alleges that “Storms last communicated with McNamara on May 9, 2019.” D.I. 103, ¶ 36.

Months later, in October 2019, Lancium filed a provisional patent application that matured into U.S. Patent No. 10,608,433 (the “’433 patent”) for which McNamara and Cline are also the named inventors. See D.I. 103-1 at 1. In August 2020, Lancium filed a patent infringement suit against a company called Layer1 Technologies, Inc. (“Layer1”) asserting infringement of the ’433 patent. D.I. 103, ¶ 52; D.I. 23 Answer ¶ 44. Plaintiffs acknowledge that they became aware of the Layer1 lawsuit “on or about August 17, 2020” but did not contact Lancium at this time or make any claim to have invented the patented technology. D.I. 103, ¶ 54. Then, around March 8, 2021, Plaintiffs read a press release announcing that “Layer 1 has licensed Lancium’s intellectual property and Lancium will provide Smart Response™ software and services to Layer1.” D.I. 103, ¶ 57.

A few weeks later, on April 14, 2021, Plaintiffs initiated this lawsuit alleging Storms should have been listed as an inventor on the '433 patent. D.I. 1. Plaintiffs' Second Amended Complaint, the operative complaint, alleges that "[t]his is an action seeking correction of the named inventors of a United States patent under 35 U.S.C. § 256," and "[a]s such, this action arises under the laws of the United States." D.I. 103, ¶ 13. Likewise, Plaintiffs' claims for correction of inventorship assert that "[t]hrough omission, inadvertence, and/or error Storms was not listed as an inventor on the '433 patent and the currently listed inventors on the '433 patent were improperly listed." *Id.*, ¶ 60. Count I further asserts that "Storms is the sole inventor of the subject matter claimed in the '433 Patent," and Count II asserts that "[i]n the alternative, Storms is a joint inventor of the subject matter claims in the '433 Patent and should be added to the individuals currently named as inventors on the '433 Patent." D.I. 103, ¶¶ 59, 63. Additional allegations that Defendants McNamara and Cline were wrongly identified as the inventors of the '433 patent are found throughout the Second Amended Complaint. *See, e.g.*, D.I. 103, ¶¶ 1, 5, 7, 46, 48, 53.

Plaintiffs' original claims for conversion and unjust enrichment were likewise based on the allegedly incorrect inventorship of the '433 patent. As such, the Court concluded that these claims were preempted by federal patent law. *See* D.I. 92, at 7, 9; *see also* D.I. 97. Plaintiffs have re-pleaded these claims, which are now based on Defendants' alleged use of "BearBox's technology, including system designs, documents, data, and know-how" to "modify their Smart Response™ software." *See* D.I. 103, ¶¶ 85, 87, 92, 96.

V. ARGUMENT

A. Legal Standards

"When presented with a motion to dismiss for failure to state a claim pursuant to Rule 12(b)(6), district courts conduct a two-part analysis. First, the Court separates the factual and legal elements of a claim, accepting all of the complaint's well-pleaded facts as true, but disregarding

any legal conclusions. Second, the Court determines whether the facts alleged in the complaint are sufficient to show a . . . plausible claim for relief." *Eaton Corp. v. Geisenberger,* 486 F. Supp. 3d 770 (D. Del. 2020), *aff'd in part, vacated in part on other grounds, remanded sub nom*. *Siemens USA Holdings Inc v. Geisenberger*, 17 F. 4th 393 (3d Cir. 2021) (internal citations omitted).

A legally sufficient complaint must establish more than a "sheer possibility" that Plaintiffs' claim is true. *Ashcroft v. Iqbal*, 556 U.S. 662, 678 (2009). It need not contain detailed factual allegations, but it must go beyond labels, legal conclusions, or formulaic recitations of the elements of a cause of action. *Bell Atl. Corp. v. Twombly*, 550 U.S. 544, 555 (2007). "Where a complaint pleads facts that are 'merely consistent with' a defendant's liability, it 'stops short of the line between possibility and plausibility of entitlement to relief.'" *Iqbal*, 556 U.S. at, 678 (quoting *Twombly*, 550 U.S. at 557). If there are insufficient factual allegations to raise a right to relief above the speculative level, the claim must be dismissed. *Twombly*, 550 U.S. at 555.

B. Plaintiffs' State Law Claims Should Be Dismissed Because They Fail As A Matter Of Law

As with their First Amended Complaint, Plaintiffs' Second Amended Complaint does not specify under which state's law Plaintiffs assert their claims for conversion and unjust enrichment. *See* D.I. 103. However, Plaintiffs have affirmatively asserted a claim for trade secret misappropriation under Louisiana law. *See id.* at Count IV ("Trade Secret Misappropriation Under Louisiana Civil Practice and Remedies Code, Title 51, Section 13-A"). In addition, as the Court noted in its Report and Recommendation on Defendants' previous Motion for Judgment on the Pleadings, "both parties agree[d] that Louisiana law applies to the state law claims at issue here," which included claims for conversion and unjust enrichment. D.I. 92 at 5 n.4.

Moreover, under the "most significant relationship" test applied in Delaware to resolve conflict of laws issues, Louisiana law applies to the extent a conflict of laws exists. *Pennsylvania*

Emp., Benefit Tr. Fund v. Zeneca, Inc., 710 F. Supp. 2d 458, 466 (D. Del. 2010) (Delaware applies the "most significant relationship" test for conflicts of law); *see also Bavarian Nordic A/S v. Acambis Inc.*, 486 F. Supp. 2d 354, 361 (D. Del. 2007). This is because both BearBox and Storms are located in Louisiana, D.I. 103, ¶¶ 8-9, and any harm they allegedly suffered also would have occurred in Louisiana.[1] *See Selective Ins. Co. v. Phila. Indem. Ins. Co.*, No. N17C-08-325, 2018 WL 2215885, at *3 (Del. Super. Ct. May 15, 2018) ("[T]he Delaware Supreme Court held 'the law of the state where the injury occurred should apply unless, with respect to the particular issue, some other state has a more significant relationship … ." (quoting *State Farm Mut. Auto. Ins. Co. v. Patterson*, 7 A.3d 454, 457 (Del. 2010)); *see also Abbott Lab. v. NutraMax Prod., Inc.*, 844 F. Supp. 443, 446 (N.D. Ill. 1994) ("The place of injury usually defines the locus of a cause of action" involving intellectual property, "and the damage to intellectual property rights is usually realized where the owner of the protected rights suffers the damage"); *Jeffers v. Kerzner Int'l Hotels Ltd.*, 319 F. Supp. 3d 1267, 1271 (S.D. Fla. 2018) ("Generally, in tort cases, the location where the injury occurred is the decisive consideration in determining the applicable choice of law."). Accordingly, Louisiana law governs Plaintiffs' unjust enrichment and conversion claims.

But as set forth below, Plaintiffs' unjust enrichment and conversion claims each fail as a matter of law and should be dismissed with prejudice.[2]

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[1] Moreover, no other state has a more significant relationship to Plaintiffs' claims as Defendants are located in both Texas and California, *see* D.I. 23, ¶¶ 8-10, and there is no single state where the alleged conduct causing Plaintiffs' purported injury occurred or where any relationship between the parties is centered. *Pennsylvania Emp., Benefit Tr. Fund*, 710 F. Supp. 2d at 467-68.

[2] As set forth in Defendants' Letter to the Honorable Christopher J. Burke (D.I. 112) and their reply letter (D.I. 114) in support of the Motion to Strike the Trade Secret Misappropriation Counts in the Second Amended Complaint (D.I. 111), Plaintiffs trade secret claims should also be stricken.

1. *Plaintiffs' Unjust Enrichment Claim Fails As a Matter of Law Because Other Remedies Are Available For the Alleged Conduct*

Despite Plaintiffs' attempt to re-plead their unjust enrichment claim, this claim fails as a matter of law because it is still based on the same conduct as their other claims. One of the elements of unjust enrichment under Louisiana law is that "there must be no other remedy at law available to plaintiff." *Baker v. Maclay Properties Co.*, 94-1529 (La. 1/17/95), 648 So. 2d 888, 897. Accordingly, the Supreme Court of Louisiana has explained that "the remedy of unjust enrichment is subsidiary in nature, and shall not be available if the law provides another remedy. The unjust enrichment remedy is only applicable to fill a gap in the law where no express remedy is provided." *Walters v. MedSouth Rec. Mgmt., LLC*, 2010-0353 (La. 6/4/10), 38 So. 3d 243, 244 (internal quotations and citations omitted).

Significantly, the court in *Walters* made clear that the relevant inquiry is not whether a plaintiff can actually prevail on an alternative claim, but rather whether there is a "gap in the law" such that no other legal framework governs the conduct alleged. Thus, it is "of no moment that plaintiff's tort claims have been held to be prescribed. The mere fact that a plaintiff does not successfully pursue another available remedy does not give the plaintiff the right to recover under the theory of unjust enrichment." *Id.* "In other words, even though a plaintiff may not succeed when it pursues its other available remedies, there is no cause of action in unjust enrichment if such a remedy exists." *Shaw v. Restoration Hardware, Inc.*, No. 21-1540, 2022 WL 343458, at *6 (E.D. La. Feb. 4, 2022) (granting motion to dismiss unjust enrichment claim); *see also Zaveri v. Condor Petroleum Corp.*, 27 F. Supp. 3d 695, 701–02 (W.D. La. 2014) ("As correctly held by Judge Feldman of the Eastern District, under Louisiana law, an unjust enrichment claim is a 'subsidiary' claim, not an alternative claim, which cannot be pursued when Louisiana law affords any other legal remedy.") (citing *JP Mack Indus. LLC v. Mosaic Fertilizer, LLC*, 970 F. Supp. 2d

516, 521 (E.D. La. 2013) ("[T]he availability of another remedy bars a plaintiff's claim for unjust enrichment, regardless of whether the plaintiff prevails in his pursuit of those other remedies.")); *Constance v. Austral Oil Expl. Co.*, No. 2:12-CV-1252, 2013 WL 6578178, at *9 (W.D. La. Dec. 13, 2013) ("Unjust enrichment is a specific cause of action that may not be asserted against a defendant as a mere catchall or safety net in the event that a plaintiff fails to succeed on the merits of his or her other claims.").

Indeed, unjust enrichment is considered "a ***remedy of last resort*** under Louisiana law." *Zaveri*, 27 F. Supp. 3d at 702 (W.D. La. 2014) (internal quotations omitted). Thus, as the Fifth Circuit held in *Ferrara Fire Apparatus, Inc. v. JLG Indus., Inc.*, "[t]he important question is whether another remedy is available, not whether the party seeking a remedy will be successful." 581 Fed. App'x 440, 443–44 (5th Cir. 2014) (applying Louisiana law). Moreover, unjust enrichment may not be asserted against a defendant "as a mere catchall or safety net in the event that a plaintiff fails to succeed on the merits of his or her other claims." *Id.* (citation omitted).

Here, Plaintiffs unjust enrichment claim is clearly based on the same alleged conduct as its conversion and trade secret misappropriation claims: the alleged use of "BearBox's technology" to improperly modify Lancium's Smart Response™ software. Indeed, Plaintiffs' unjust enrichment claim alleges that they "conferred a benefit on Defendants by providing them valuable technology, specifically BearBox's technology, including system designs, documents, data, and know-how" and "Defendants used Plaintiffs' system designs, documents, data, and know-how to modify their Smart Response™ software to function as BearBox's technology did, [and] [a]s a result, Defendants are deriving an unjust benefit from exploiting BearBox's property." D.I. 103, ¶¶ 92, 96. This is the same basis as their conversion claim, which alleges that "Defendants intentionally and willfully assumed dominion and control over BearBox's technology, including

system designs, documents, data, and know-how and improperly used it to modify their Smart Response™ software." D.I. 103, ¶ 87. Plaintiffs' conversion claim additionally alleges that "[d]espite providing Defendants with system designs, documents, data, and know-how that allowed Defendants to modify their Smart Response™ software, and corresponding system designs, Defendants have not compensated or recognized Plaintiffs for the use of BearBox's technology," which "constitute[s] an improper and unauthorized use of Plaintiffs' property." D.I. 103, ¶ 89.

Likewise, Plaintiffs' trade secret misappropriation claims allege that "Defendants misappropriated Plaintiffs' trade secrets when they used BearBox technology, without Plaintiffs' authorization, in at least its Smart Response™ software." D.I. 103, ¶¶ 72, 81. And Plaintiffs' trade secret misappropriation claims even allege that they have been harmed by "financial loss for any ***unjust enrichment*** caused by the misappropriation of the trade secrets." D.I. 103, ¶¶ 73, 82 (emphasis added).

Because there are other remedies available to address Defendants' allegedly wrongful conduct (*e.g.*, conversion and trade secret misappropriation), unjust enrichment is not an available claim, regardless of whether Plaintiffs can successfully proceed on its other claims. *See Walters v. MedSouth Rec. Mgmt., LLC*, 2010-0352 (La. 6/4/10), 38 So. 3d 241, 242. *Shaw v. Restoration Hardware, Inc.*, No. CV 21-1540, 2022 WL 343458 (E.D. La. Feb. 4, 2022). In *Shaw*, the court explained that the plaintiffs' unjust enrichment claim was based on "[t]he same alleged conduct [that] is the basis of plaintiffs' other claims in this litigation." *Id.* at *6. As such, the court held that "plaintiffs cannot succeed in proving the fifth element of the unjust enrichment claim: absence of another remedy" and therefore dismissed the unjust enrichment claim. *Id.* The court further explained that even though the plaintiffs' other claims that were based on the same conduct also

failed as a matter of law and were dismissed, "the failure on those claims would not lead to recovery under an unjust enrichment theory." *Id.*

Thus, because here BearBox's unjust enrichment claim is based on the same conduct as its conversion and trade secret claims, the unjust enrichment claim (Count VI) should be dismissed with prejudice.

2. ***To The Extent Plaintiffs' Unjust Enrichment Claim Is Premised On The Use of Non-Confidential Information, It Is Preempted By Federal Patent Law***

It is well-established that "[f]ederal law preempts state law that offers patent-like protection to discoveries unprotected under federal patent law." *Ultra-Precision Mfg., Ltd v. Ford Motor Co.*, 411 F.3d 1369, 1377-78 (Fed. Cir. 2005) (noting that "Federal Circuit law governs whether federal patent law preempts a state law claim") (internal quotations and citation omitted). The Supreme Court has also noted that "[a] state law that substantially interferes with the enjoyment of an unpatented utilitarian or design conception which has been freely disclosed by its author to the public at large impermissibly contravenes the ultimate goal of public disclosure and use which is the centerpiece of federal patent policy." *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 156-57 (1989). Thus, "[a]bsent secrecy, state law cannot create a collateral set of rights available as an adjunct or expansion to patent rights." *Ultra- Precision*, 411 F.3d at 1379 (quoting *Waner v. Ford Motor Co.*, 331 F.3d 851, 856 (Fed. Cir. 2003)).

Here, as addressed above, Plaintiffs' unjust enrichment claim is premised upon Defendants' alleged use of "BearBox's technology" to modify their Smart Response™ software—the same conduct that forms the basis of Plaintiffs' conversion and trade secret misappropriation claims. However, although Plaintiffs' conversion and trade secret misappropriation claims are explicitly limited to Defendants' alleged use of "confidential"

information (*see, e.g.*, D.I. 103, ¶¶ 68-72, 77-81, 88), Plaintiffs' unjust enrichment claim is silent regarding whether "BearBox's technology" at-issue was confidential. *See* D.I. 103, ¶¶ 91-101. Nonetheless, to the extent Plaintiffs base their unjust enrichment claim on Defendants' alleged use of non-confidential technology or information (or attempt to distinguish their unjust enrichment claims from their conversion and trade secret misappropriation claims on this basis), the claim is preempted by federal patent law. Under federal patent law, an idea is considered publicly available if "given to a member of the public without restriction." *See Pronova Biopharma Norge AS v. Teva Pharms. USA, Inc.*, 549 F. App'x 934, 940 (Fed. Cir. 2013); *see also Bonito Boats*, 489 U.S. at 149 (under the one year statutory bar of federal patent law's 35 U.S.C. § 102, "[o]nce an inventor has decided to lift the veil of secrecy from his work, he must choose the protection of a federal patent or the dedication of his idea to the public at large"). Thus, if Plaintiffs are permitted to pursue non-patent claims for use of an idea or technology that was publicly known, the Court would be allowing Plaintiffs to encroach impermissibly on the exclusive domain of federal patent law.

Indeed, the Federal Circuit, which "governs whether federal patent law preempts a state law claim," has repeatedly held similar unjust enrichment claims based on the use of non-confidential information to be preempted. For example, in *Ultra-Precision*, the court held plaintiff's unjust enrichment claim, which was premised upon the defendant's "using, manufacturing, and selling vehicles equipped with [Ultra-Precision's] technology" was preempted because the idea/technology was not kept confidential and was therefore "free for all the world to enjoy." *Id.* at 1380-82. Additionally, in *Waner* the court affirmed dismissal of the plaintiff's unjust enrichment claim premised upon the use of his non-confidential idea because such "ideas can only be protected under intellectual property law by the patent system." *Waner*, 331 F.3d at 856–57. Accordingly, to the extent Plaintiffs' unjust enrichment claim is premised upon the alleged use of

non-confidential technology, information, or ideas, this claim is preempted and should be dismissed with prejudice.

3. ***Plaintiffs' Conversion Claim Fails Because They Were Not Deprived Of Tangible Property***

Plaintiffs' conversion claim fails as a matter of law because their allegations do not—and cannot—state a claim for conversion. Under Louisiana law, "[a] conversion is an act in derogation of the plaintiff's ***possessory*** rights and any wrongful exercise or assumption of authority over another's goods, ***depriving him of the possession***, permanently or for an indefinite time." *Quealy v. Paine, Webber, Jackson & Curtis, Inc.*, 475 So. 2d 756, 760 (La. 1985) (emphasis added); *see also Bihm v. Deca Sys., Inc.*, 2016-0356 (La. App. 1 Cir. 8/8/17), 226 So. 3d 466, 478 (citing *Quealy,* 475 So. 2d at 760). Thus, conversion "is grounded on the unlawful interference with the ownership or possession of a movable." *CamSoft Data Systems, Inc. v. Southern Electronics Supply, Inc.*, 2019 CA 0731, 2019 WL 2865359, at *2 (La. Ct. App. July 2, 2019), *writ denied*, 282 So. 3d 1071 (La. 2019).

Here, Plaintiffs' conversion claim fails because Plaintiffs were not deprived, and do not allege that they were deprived, of ownership or possession of any tangible, movable property. As an initial matter, the only things that Plaintiffs allege that Defendants converted were "BearBox's technology, including system designs, documents, data, and know-how." D.I. 103, ¶ 87. Moreover, Plaintiffs only allege that they provided Defendants with information about "BearBox's technology" via "conversations, emails, and text messages." *See, e.g.*, *id.*, ¶¶ 33-34. Importantly, Plaintiffs do not allege that Defendants converted any paper or hard copy documents, and they do not allege that they were ever deprived of copies of or access to the allegedly converted "system designs, documents, data, and know-how." *See id.*, ¶¶ 84-90. Indeed, they do not allege that Defendants took or converted the only copies of their "system designs, documents, data, and know-

how." *Id.* They make no allegation that they were deprived of ownership or possession of their "system designs, documents, data, and know-how." *Id.* Nor could they because in order to email or text message any information to Defendants, Plaintiffs must have had their own copies. Thus, Plaintiffs fail to allege a cause of action for conversion.

CamSoft is instructive. 2019 WL 2865359, at *2-3. Similar to this case, in *CamSoft*, the plaintiff alleged the defendants were liable for conversion based on the alleged "ongoing use of CamSoft's confidential technical and business information" that included "device compilations, software code, know-how, networking designs, installation process, business methods, marketing plans, pricing information, and strategic wireless network integrator business plans." *Id*. The *CamSoft* court, however, granted summary judgment on the conversion claim for two reasons. One, the claim was based on "immovable, intangible information." *Id.* at *3. Two, despite the defendants' alleged use of CamSoft's information, "CamSoft was not deprived of its confidential business information," and "a conversion requires a deprivation of possession." *Id.* This same reasoning applies here because Plaintiffs have not alleged—and cannot allege—that they were deprived of their allegedly converted technology or information because they retained copies of this information. Indeed, just as in *CamSoft*, Plaintiffs do not allege that "their business information was taken from them in physical form or that they no longer had the use of their confidential information." *Id.* at 3 n.3.

Accordingly, the Court should dismiss Plaintiffs' conversion claim (Count V) with prejudice.

VI. CONCLUSION

For the reasons stated above, the Court should dismiss Count V (conversion) and Count VI (unjust enrichment) in the Second Amended Complaint, with prejudice.

Dated: March 16, 2022

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U.S. District Court

District of Delaware

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Case Number: 1:21-cv-00534-MN-CJB
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Docket Text:
REPORT AND RECOMMENDATION: The Court, having reviewed Defendants' motion seeking dismissal, pursuant to Fed. R. Civ. P 12(b)(6), of Plaintiffs' Count V (conversion) and Count VI (unjust enrichment) in the operative Second Amended Complaint ("Motion"), (D.I. 120), the briefing related thereto, (D.I. 121; D.I. 128; D.I. 133), and having heard argument on May 23, 2022, hereby recommends as follows: (1) With regard to Count V, the Court recommends that the Motion be DENIED. Defendants' argument is that Plaintiffs' conversion claim must fail as a matter of law because under Louisiana law (which both sides agree applies to these claims) there can be no conversion of electronic files (the type of documents allegedly converted in Count V) where the owner retains a copy of those files (as Plaintiffs acknowledge it did), since in such a case, the owner is not completely deprived of the property at issue. (D.I. 133 at 2-6) This is a difficult issue, and Defendants do cite to some Louisiana state court precedent that provides some support for their position. See CamSoft Data Sys., Inc. v. S. Elecs. Supply, Inc., 2019 CA 0731, 2019 CW 0514, 2019 WL 2865359, at *2-3 & n. 3 (La. Ct. App. July 2, 2019) (concluding that a claim for conversion could not stand because "a conversion requires a deprivation of possession" and the plaintiff retained a copy of the allegedly converted electronic materials at issue); but see Mabile v. BP, p.l.c., CIVIL ACTION NO. 11-1783, 2016 WL 5231839, at *1, *23 (E.D. La. Sept. 22, 2016) (permitting a conversion claim under Louisiana law that was premised on the defendant's obtaining of the plaintiff's schematic, where the plaintiff e-mailed a digital copy of the schematic but also retained a copy); cf. Total Safety, U.S., Inc. v.

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

BEARBOX LLC and AUSTIN STORMS, Plaintiffs, v. LANCIUM LLC, MICHAEL T. MCNAMARA, and RAYMOND E. CLINE, JR., Defendants.	C.A. No. 21-534-MN

DEFENDANTS' OBJECTIONS TO THE REPORT AND RECOMMENDATION (D.I. 143) REGARDING DEFENDANTS' MOTION TO DISMISS COUNTS V AND VI OF THE SECOND AMENDED COMPLAINT

Dated: June 9, 2022

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I. INTRODUCTION

Pursuant to Federal Rule of Civil Procedure 72(b)(2), Defendants object to the portion of the Report and Recommendation of Magistrate Judge Burke (D.I. 143, the "R&R") on Defendants' Motion To Dismiss Counts V and VI of the Second Amended Complaint (D.I. 120, the "Motion to Dismiss"), recommending that the Motion to Dismiss be denied as to Count V (Plaintiffs' claim for conversion). Plaintiffs' conversion clam is premised on the alleged conversion of electronic documents that Plaintiffs provided to Defendants, but for which they retained copies. Thus, Plaintiffs were not deprived of the allegedly converted property. Under applicable Louisiana law, however, conversion requires that the owner of property be deprived of possession of that property. Although the R&R acknowledges that "[t]his is a difficult issue," it mistakenly recommends against granting the Motion to Dismiss as to Plaintiffs' claim for conversion based on a misunderstanding that such a claim can arise if Defendants interfered with Plaintiffs' "ownership" of the allegedly converted property even if Plaintiffs were not deprived of possession of the property. But this is incorrect. Deprivation of possession is a necessary element of a claim for conversion under Louisiana law. Accordingly, the Court should grant Defendants' Motion to Dismiss in its entirety and dismiss Plaintiffs' claims for conversion and unjust enrichment.

II. BACKGROUND

Defendant Lancium LLC ("Lancium") is a technology company that since its founding in 2017 has been a leading innovator in the field of flexible datacenters to perform blockchain hashing operations, such as mining for cryptocurrency, with little to no energy costs using clean and renewable energy that would otherwise be wasted. D.I. 23 at 20. Lancium's technology and intellectual property, including its Smart Response™ software, enables more renewable energy on

the nation's power grid, and Lancium's innovations have led to numerous pending and issued patents on its technology. D.I. 23 at 23.

Plaintiff Austin Storms' only interaction with any of Defendants occurred in May 2019, when Mr. Storms met Defendant Michael McNamara and they attended a group dinner, along with several other people, after a one-day industry conference. In the days that followed, Mr. Storms and Mr. McNamara exchanged a handful of text messages and Mr. Storms sent Mr. McNamara a single email. *See* D.I. 103 at ¶¶ 32-36; *see also* D.I. 23 at Exhibits C and D (the exchanged text messages and email). Based on these interactions, Plaintiffs have asserted a series of meritless and legally flawed claims against Defendants seeking damages for the alleged improper use of information Mr. Storms allegedly provided to Defendants. *See* D.I. 19 (First Amended Complaint dropping Plaintiffs' originally pled trade secret misappropriation claims); D.I. 97 (dismissing Plaintiffs' conversion and unjust claims pled in the First Amended Complaint); 4/22/22 Minute Entry (striking the trade secret misappropriation claims pled in the Second Amended Complaint). Plaintiffs' currently pled conversion claim (aside from its unjust enrichment claim, which the R&R recommends dismissing) is the last of these claims, but it is equally meritless and legally flawed.[1]

Plaintiffs' operative Second Amended Complaint ("SAC," D.I. 103) alleges that Defendants converted "BearBox's technology, including system designs, documents, data, and know-how, and improperly used it to modify their Smart Response™ software … ." D.I. 103 at ¶ 87. Importantly, however, Plaintiffs only allege that they provided Defendants with information about "BearBox's technology" via "conversations, emails, and text messages." *See, e.g.*, *id.*, ¶¶

[1] If the Court grants Defendants' Motion to Dismiss in its entirety, Plaintiffs' only remaining claims will be their claims regarding the allegedly incorrect inventorship of U.S. Patent No. 10,608,433 (*i.e.*, Counts I and II of the Second Amended Complaint, D.I. 103), but these claims do not seek monetary damages.

33-34. Plaintiffs do not allege that Defendants converted any paper or hard copy documents, and they do not allege that they were ever deprived of copies of or access to the allegedly converted "system designs, documents, data, and know-how." *See id.*, ¶¶ 84-90. Plaintiffs also do not and cannot allege that Defendants took or converted the only copies of their "system designs, documents, data, and know- how." *Id.* They make no allegation that they were deprived of possession of their "system designs, documents, data, and know-how." *Id.*

Defendants moved to dismiss Plaintiffs' claim for conversion because under Louisiana law conversion requires that the owner of the allegedly converted property be deprived of that property.[2] *See* D.I. 121 at 12-13; D.I. 133 at 1-6. Indeed, as set forth in Defendants' opening brief in support of the Motion to Dismiss, under Louisiana law, "[a] conversion consists of an act in derogation of the plaintiff's ***possessory*** rights, and any wrongful exercise or assumption of authority over another's goods, ***depriving him of the possession***, permanently or for an indefinite time, is a conversion." *Quealy v. Paine, Webber, Jackson & Curtis, Inc.*, 475 So.2d 756, 760 (La. 1985)[3]; *see also Bihm v. Deca Sys., Inc*., 2016-0356 (La. App. 1 Cir. 8/8/17), 226 So.3d 466, 478 (citing *Quealy,* 475 So.2d at 760). Despite recognizing that "[t]his is a difficult issue," the R&R recommends denying the portion of Defendants' Motion to Dismiss regarding the claim for conversion. D.I. 143. Defendants object to that recommendation.

III. ARGUMENT

A. Legal Standards

"For reports and recommendations issued regarding dispositive motions, Rule 72(b)(3) of the Federal Rules of Civil Procedure instructs that 'a party may serve and file specific written

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[2] The R&R correctly notes that Louisiana law applies to Plaintiffs' conversion claim and "both sides agree" on this point. *See* D.I. 143.

[3] All emphases added unless otherwise noted.

objections to the proposed findings and recommendations' '[w]ithin 14 days' and '[t]he district judge must determine de novo any part of the magistrate judge's disposition that has been properly objected to.'" *Speakman v. Williams*, No. 18-1252-MN, 2019 WL 4751939, at *2 (D. Del. Sept. 30, 2019) (quoting Fed. R. Civ. P. 72); *see also* 28 U.S.C. § 636(b)(1); *Brown v. Astrue*, 649 F.3d 193, 195 (3d Cir. 2011).

B. Plaintiffs' Conversion Claim Should Be Dismissed Because Conversion Under Louisiana Law Requires That The Plaintiff Be Deprived Of Its Property And There Is No Dispute That Plaintiffs Were Not Deprived Of The Allegedly Converted Property

Count V of Plaintiffs' SAC asserts a claim for conversion under Louisiana law based on Defendants allegedly converting Plaintiffs' electronic files. This claim fails as a matter of law, however, because conversion under Louisiana law requires that the owner be deprived of its property. Here, Plaintiffs only allege that they provided the allegedly converted files via email or text message, and as such, Plaintiffs could not have been deprived of the allegedly converted. This is because in order to email or text message any information to Defendants, Plaintiffs must have had their own copies. D.I. 103 at ¶¶ 33-34. Indeed, the R&R recognizes that "Plaintiffs acknowledge [they] did" retain copies of the allegedly converted property. *See* D.I. 143. Nonetheless, the R&R recommends that the Motion to Dismiss be denied as to Plaintiffs' conversion claim because although "[t]his is a difficult issue, and Defendants do cite some Louisiana state court precedent that provides some support for their position," it concludes that "regardless of whether Defendants are correct on that point," conversion can occur "when a defendant unlawfully interferes with the plaintiffs 'ownership' of a movable" and "Plaintiffs' conversion claim can be read to allege that this is what occurred here." D.I. 143. The R&R, however, is incorrect and conversion under Louisiana law requires that the owner of property be deprived of possession of that property in order for a claim for conversion to arise. In other words,

deprivation of possession is a necessary element of a conversion claim.

As an initial matter, there is more than "some support" for the requirement that a property owner be deprived of possession of its property in order for a conversion claim to arise. Indeed, the Louisiana Supreme Court has explained that "[t]he gist of a conversion has been declared to be not the ***acquisition*** of the property by the wrongdoer, but the ***wrongful deprivation*** of a person of property to the possession of which he is entitled." *Importsales, Inc. v. Lindeman*, 231 La. 663, 668, 92 So.2d 574, 575–76 (1957) (citations omitted). The Louisiana Supreme Court has also repeatedly noted the deprivation requirement for conversion when addressing conversion claims. *See Dual Drilling Co. v. Mills Equip, Invs., Inc.*, 721 So.2d 853, 857 (La. 1998) (explaining that the cause of action of conversion "is available to an owner ***dispossessed*** as a result of an offense or quasi-offense or, in other words, a 'tort'"); *Quealy*, 475 So.2d at 760 ("A conversion consists of an act in derogation of the plaintiff's ***possessory*** rights, and any wrongful exercise or assumption of authority over another's goods, ***depriving him of the possession***, permanently or for an indefinite time, is a conversion."); *Edward Levy Metals, Inc. v. New Orleans Public Belt R.R.*, 148 So.2d 580, 582 (La. 1963) ("It is well settled under concepts of conversion forming the basis for any tort action herein, that it is not the erroneous accumulation of the property by the wrongdoer which gives rise to delictual responsibility, but the wrongful ***deprivation*** of a person of property ***to the possession*** of which he is entitled once the possessor has knowledge that the property is under his control."). Intermediate appellate courts in Louisiana have also recently emphasized the deprivation requirement. *See, e.g. Bihm v. Deca Sys., Inc.*, 2016-0356 (La. App. 1 Cir. 8/8/17), 226 So.3d 466, 478 ("A conversion is an act ***in derogation of the plaintiff's possessory rights*** and any wrongful exercise or assumption of authority over another's goods, ***depriving him of the possession***, permanently or for an indefinite time."); *Glod v. Baker*, 998 So.2d 308, 317 (La. App.

3d Cir. 2008) (citing *Angelo and Son, Inc. v. Rapides Bank & Trust Co.,* 95–992 (La.App. 3 Cir. 4/10/96), 671 So.2d 1283, *writs denied,* 96–1173, 96–1204 (La. 6/21/96), 675 So.2d 1083) (same). Thus, it is well-established by controlling authority that conversion under Louisiana law requires a deprivation of possession, which Plaintiffs do not and cannot allege.

Although the Louisiana Supreme Court has not addressed a case where, as here, the conversion claim was based on the alleged conversion of electronic documents where the owner retained a copy, this situation has been addressed by the Court of Appeal of Louisiana for the First Circuit in *CamSoft Data Sys., Inc. v. S. Elecs. Supply, Inc.*, 2019 CA 0731, 2019 WL 2865359 (La. Ct. App. July 2, 2019), *writ denied*, 282 So.3d 1071 (La. 2019).[4] Indeed, *CamSoft* addressed a nearly identical situation where the conversion claim was based on the alleged "ongoing use of CamSoft's confidential technical and business information" that included "device compilations, software code, know-how, networking designs, installation process, business methods, marketing plans, pricing information, and strategic wireless network integrator business plans." 2019 WL 2865359, at *2-3. The *CamSoft* court, however, found that there could be no conversion because the claim was based on use of electronic files and "immovable, intangible information" and "CamSoft was not deprived of this information" but "***a conversion requires a deprivation of possession***." *Id.* at *3. Furthermore, the *CamSoft* plaintiff sought to appeal this decision to the Louisiana Supreme Court arguing that "[t]he First Circuit erred in holding as a *matter of law* that there can be no *deprivation* for purposes of conversion unless the subject property is completely removed by the plaintiff's possession and use" because in Louisiana "the law of conversion seeks to address the defendant's repudiation of plaintiff's ownership rights to the subject property." *See*

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[4] Where a state's highest court has not spoken, a federal court applying state law has a duty to decide a case as it believes the state's highest court would have done. *Valley Forge Ins. Co. v. Jefferson*, 628 F. Supp. 502, 510 (D. Del. 1986).

Exhibit 2 (*CamSoft* plaintiff's application for writ of certiorari) at 5-8 (emphasis in original). But the Supreme Court ***denied*** the application for writ of certiorari. *CamSoft Data Sys., Inc. v. S. Elecs. Supply, Inc.*, 282 So.3d 1071 (La. 2019). Thus, beyond providing "some support" for Defendants' Motion to Dismiss, *CamSoft* establishes that Plaintiffs' conversion claim fails as a matter of law because they were not deprived of possession of the allegedly converted property.

Although the R&R cites *Mabile v. BP, P.L.C.*, No. 11-1783, 2016 WL 5231839, at *1, *23 (E.D. La. Sept. 22, 2016) and *Total Safety, U.S., Inc. v. Code Red Safety & Rental, LLC*, No. 19-12953, 2019 WL 5964971, at *1, *4-5 (E.D. La. Nov. 13, 2019) as contrary authority to *CamSoft*, both of these cases are federal district court decisions that are not controlling authority. *See* D.I. 143. In addition, *Mabile* was decided before *CamSoft* and thus did not have the benefit of its guidance on Louisiana law. Furthermore, *Total Safety* is inapposite because it did not address the deprivation requirement for a conversion claim. *See* 2019 WL 5964971, at *4-5. Rather, *Total Safety* only held that a conversion claim was not preempted by the Louisiana Uniform Trade Secrets Act.[5] *Id.*

The R&R cites to *CamSoft* in support of its conclusion that interference with "ownership" is an independent basis that can give rise to a conversion claim, but *CamSoft* does not support this conclusion. *See* D.I. 143. Rather, *CamSoft* is explicit that "conversion requires a deprivation of possession." 2019 WL 2865359, at *3. Moreover, similar to Plaintiffs' claims here, the *CamSoft* plaintiffs' conversion claim was based on the alleged "use of CamSoft's confidential technical and

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[5] *Total Safety* was also raised by Plaintiffs for the first time during the hearing on the Motion to Dismiss. *See* Ex. 1 (5/23/22 Hr'g Tr.) at 27:18-23; *see also* D.I. 128 (Plaintiffs' opposition to Motion to Dismiss). Although the R&R cites to *Total Safety*, when counsel pointed out that *Total Safety* was not raised in the parties' briefing and was not appropriate authority to raise for the first time during oral argument, Magistrate Judge Burke responded that "I agree." *See* Ex. 1 at 29:2-17.

business information." *Id.* at *2. Thus, the conclusion that such use can give rise to a claim for conversion where there is no deprivation of possession is directly contrary to *CamSoft*'s holding.

The R&R also cites to Plaintiffs' opposition to the Motion to Dismiss in support of its conclusion that interference with ownership can give rise to a claim for conversion where there is no deprivation of possession. *See* D.I. 143. But as set forth in Defendants' reply brief, Plaintiffs' case law is all distinguishable, does not support this proposition, is not controlling, and/or predates *CamSoft*. *See* D.I. 133 at 2-5.

The Fifth Circuit has also made clear that interference with ownership is not an independent basis for a conversion claim under Louisiana law. In *Chrysler Credit Corp. v. Perry Chrysler Plymouth, Inc.*, where the plaintiff asserted a claim for conversion of funds, the Fifth Circuit explained that "to prevail against [defendant], [plaintiff] ***must prove*** that (1) it owned funds misused by him; (2) the misuse was inconsistent with its rights of ownership; ***and (3) the misuse constituted a wrongful taking*** of the funds." 783 F.2d 480, 484 (5th Cir. 1986); *see also Tri-state Bancshares, Inc. v. Scott*, No. CV 15-2053, 2016 WL 4098604, at *4 (W.D. La. July 28, 2016) (quoting *Chrysler Credit* and explaining that "[t]he Fifth Circuit articulates three elements to be proven by the plaintiff for the tortious conversion of funds under Louisiana law."). In other words, interference with ownership rights is an ***additional requirement*** for a conversion claim beyond the requirement for a "taking" (*i.e.*, a deprivation of possession). And here, Plaintiffs have not and cannot allege that they were deprived of the allegedly converted property. *See* D.I. 143. As such, the R&R's recommendation that dismissal of Plaintiffs' conversion claim be denied because interference with "ownership" is an alternative basis for such a claim is legally flawed. Plaintiffs' the conversion claim fails as a matter of law because they were not deprived of possession of the allegedly converted property.

IV. CONCLUSION

For the reasons stated above, the R&R's conclusion that interference with ownership is an independent basis for a conversion claim is mistaken. The Court should sustain Defendants' objections to the R&R and grant Defendants' Motion to Dismiss in its entirety.

Dated: June 9, 2022

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IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

BEARBOX LLC and AUSTIN STORMS, Plaintiffs, v. LANCIUM LLC, MICHAEL T. MCNAMARA, and RAYMOND E. CLINE, JR., Defendants.	C.A. No. 21-534-MN

CERTIFICATION PURSUANT TO DISTRICT OF DELAWARE STANDING ORDER FOR OBJECTIONS FILED UNDER FED. R. CIV. P. 72

Defendants Lancium LLC, Michael T. McNamara and Raymond E. Cline ("Defendants") hereby certify that the foregoing objections do not raise any legal or factual arguments that were not previously raised before Magistrate Judge Burke.

Dated: June 9, 2022

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EXHIBIT 1

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

BEARBOX LLC, et al.,)
)
Plaintiffs,) C.A. No. 21-534-MN-CJB
)
v.)
)
LANCIUM LLC, et al.,)
)
Defendants.)

Monday, May 23, 2022
1:00 p.m.

BEFORE: THE HONORABLE CHRISTOPHER J. BURKE
United States District Court Judge

APPEARANCES:

ASHBY & GEDDES
BY: ANDREW MAYO, ESQ.

-and-

MARSHALL, GERSTEIN & BORUN
BY: JOHN LABBE, ESQ.
BY: BENJAMIN HORTON, ESQ.

Counsel for the Plaintiff

APPEARANCES CONTINUED:

BARNES & THORNBURG
BY: CHAD STOVER, ESQ.
BY: ADAM KAUFMANN, ESQ.
BY: MARK NELSON, ESQ.

Counsel for the Defendant

THE COURT: Good afternoon, everyone. It's Judge Burke here. Can everyone hear me okay?

COUNSEL: Yes, Your Honor.

THE COURT: All right. I know our court reporter is with us and we thank our court reporter for their service and let's go on the record in light of that and as we do let me just say a few things for the record. The first is that we're here this afternoon by way of teleconference in the matter of BearBox LLC, et al, versus Lancium LLC, et al. It's civil action number 21-534-MN-CJB here in our court. And we're here for a teleconference to hear brief argument on the pending motion to dismiss filed by the defendant's side.

Before we go further, let's have counsel for each side identify themselves for the record. We'll start first with counsel for the plaintiff's side and we'll begin there with Delaware counsel.

MR. MAYO: Good afternoon, Your Honor. This is Andrew Mayo from Ashby & Geddes on behalf of the plaintiff, BearBox and Austin

Storms. I am joined this afternoon by my co-counsel from Marshall, Gerstein & Borun, you have Benjamin Horton and John Labbe on the line.

THE COURT: All right. And Mr. Mayo, who will be addressing the issues today?

MR. MAYO: Mr. Horton, Your Honor.

THE COURT: Okay. Great. And similarly, we'll ask defendant's to identify themselves, again beginning with Delaware counsel and to let us know who will be addressing the issues for their side.

MR. STOVER: Good afternoon, Your Honor. Chad Stover from Barnes & Thornburg for defendants and with me are my partners Adam Kaufmann and Mark Nelson and Mr. Kaufmann will be addressing the Court this afternoon on this motion.

THE COURT: Okay. Thank you. Thanks to all. All right. Counsel, as you know, the motion to dismiss implicates two claims that are in the current iteration of the operative complaint. One is a conversion claim and then the second is the unjust enrichment claim. There is one argument for dismissal of

the conversion claim and for the unjust enrichment claim, there are a few different arguments. There, the arguments are related to the fifth element of the claim on the one hand and they will relate to the federal preemption argument on the other. Why don't we first deal with the arguments about the conversion claim and after we hear argument on that, we can move on to the unjust enrichment claim. On that front, let me then turn first to defendant's counsel and, Mr. Kaufmann, I'll turn to you and I'll just have a few questions and I'll certainly let you add anything else that you wish to add from your briefing if it's not something we get into via my questions.

And so with regard to the conversion issue, you know, a lot of this comes down to your argument that when it comes to Louisiana law, what has to be pleaded and established is that in some way what's alleged here is an instance of a party depriving the owner of possession of information or the ability to use the property or the information. And here your basic assertion is that the

complaint doesn't plead that because the information at issue was transferred electronically and it's clear from the allegations that the plaintiff retained a copy of it and so the plaintiff never lost -- was never deprived of possession of the information or the ability to use it.

Have I set out the gist of your argument at least by way of kind of framing it?

MR. KAUFMANN: Yes, Your Honor, I think you have. I guess maybe one point of clarification I would make is you're correct that the primary basis for our claim is that there's been no alleged deprivation of the converted property. I will say I think there's two aspects to the allegation of what the converted property is. The second amended complaint refers to conversion of some actual electronic documents, but also know-how is one of the things that is allegedly converted. And to the extent that know-how is not tied to physical things, physical documents or electronic documents, our position is that would also be, you know, not the proper subject matter

of a conversion claim because it's intangible. Know-how divorced from any physical document is intangible and can't be converted and then of course for the electronic documents, there was no deprivation and so there can also been no conversion.

THE COURT: I don't remember this know-how issue coming up from the briefing. My memory of the briefing, what the parties were arguing about there, it seemed to be understood that yes, the information that is alleged to have been converted was information that was sent electronically and obtained electronically and that presumably stored electronically at defendant's side. Did the parties get into this -- do you disagree? Did the parties talk about what you were just talking about now in the briefs?

MR. KAUFMANN: Well, Your Honor, I'd just point out that in our brief the way the claim has been alleged refers to know-how as we've noted in our briefing as well. But you're correct, I don't believe there's any dispute that what was converted was electronic

documents.

THE COURT: Okay. And then I guess, you know, there was some back and forth about whether under the Louisiana law electronic information or documents can be the type of property that could be converted. And at some point I guess certainly about the time of the reply brief you acknowledged, yes, that's true, we're not saying on the defendant's side that electronic information can't be converted. And I guess my question there to you was, in your view is the only way that electronic information can be converted is if a party either literally kind of takes the electronic information physically, you know, say, for example, like in one of the cases is information on a hard drive, and takes that hard drive and takes it away from the plaintiff or if the defendant's side, you know, deletes or gets rid of the electronic information? Put differently, in your view, is there any way that you can convert electronic information simply by receiving it, you know, via like an e-mail or a text or something like that?

MR. KAUFMANN: Well, Your Honor, I think that the conversion does require a deprivation of the property and so just by receiving a copy of electronic documents via e-mail or some other electronic conveyance, no, I don't believe there is a way that that could be converted as long as the owner of that property retained a copy of it. I think you correctly summarized that instances of conversion of electronic documents could occur in instances like where the documents are stored on a physical hard drive and the hard drive is taken or, yeah, the files were withheld from the owner, I believe is one of the cases. What was discussed in the briefing dealt with a situation where a party developed software that was, you know, stored on a computer hard drive and then didn't turn it over to the party that had paid for it.

THE COURT: Right. Like if two parties entered into a contract and the defendant is supposed to develop and create software for the plaintiff, but the allegation is defendant never gave this software to the

plaintiff, you know, that's if you have electronic information or software that can be properly said to be alleged to be converted, but you would say it's an example where the entirety of that information is in the defendant's possession?

MR. KAUFMANN: Correct.

THE COURT: Okay. And then I guess just thinking about it, how come there can't be a deprivation of property regarding electronic documents when an owner or plaintiff retains a copy? Isn't it -- couldn't it be said that the owner is deprived of sole possession of the electronic documents in that situation, even if they're not deprived of total possession of the information?

MR. KAUFMANN: No, Your Honor, I don't believe there could be. You know, the only, I think, potential scenario I could see where there could be a deprivation where the owner of the files retained a copy could be in the scenario where the information was the basis of a patent. But as Your Honor knows, the original conversion claim in this case was based

on that, that Lancium converted BearBox's property by patenting it. And Your Honor, you know, correctly found that that claim was not viable and dismissed that claim. And so now the basis of this conversion claim is something different than that. Right? I mean, the allegations are no longer that the property was converted into a patent whereby Lancium would have the ability to prevent, you know, someone else from using their patented technology. As long as BearBox had a copy of their electronic files, they can do whatever they want with it. And again, that property, the basis of the conversion claim is something different than what is the subject matter of the patent that their enrichment claims relate to.

THE COURT: I think what you're saying is, tell me if I'm wrong, but under the Louisiana law when it comes to conversion, there isn't the idea -- you can't have a scenario where, you know, there's a piece of property, say electronic information, or any kind of property really, and the plaintiff holds onto one copy of it, but the defendant gets another

copy of it and the plaintiff can claim that the defendant converted their property. Isn't that right? Isn't that -- isn't that, from what you're arguing, you can't have a conversion claim under Louisiana law in your view if each side keeps a copy, if each side ends up with a copy of the allegedly converted electronic material, is that right?

MR. KAUFMANN: I think that is correct, Your Honor. And that, you know, I think what the CamSoft case found, you know, explicitly, that, you know, they quoted the Louisiana supreme court Binn case, cited to the Binn, says that a conversion requires a case of possession. And, for example, in CamSosft there was no deprivation because the owner of the property retained copies of their information and so there could not be a conversion.

THE COURT: And then last question for you that I had, the Louisiana law, as both sides note, lists out the seven kind of possible examples of conversion. And in describing what those things are, again, you say that they each involve depriving the owner of possession or the

ability to use its property. I guess my question is how is that true with example number seven, which is referred to as ownership is asserted over the channel. Can't you have a scenario where you have a conversion claim where a party claims that they own certain property but nevertheless, it physically remains -- also remains in the hands of the plaintiff?

MR. KAUFMANN: Well, Your Honor, I don't believe you could have that scenario where there would be a situation other than, you know, the scenario I mentioned before, where the -- you know, we're talking about the subject of a patent. You know, the Louisiana supreme court has been clear that, you know, the basis of a conversion claim, in the Import Sales case the supreme court was explicit that the gist of a conversion has been declared not to be the acquisition of the property by the wrong does, but the wrongful deprivation of a person of the property to the possession to which he is entitled. And the only way to assert ownership over property that would deprive the owner of that ownership would be to have physical

possession of it, unless there was some legal mechanism to preclude them from using that property. And I think the only legal mechanism that could be would be a patent. And Your Honor has already found that that can't be the basis of a conversion claim.

THE COURT: Taking it out of the electronic information context, though, let's say think about just a physical item, like a car. Let's say a plaintiff on its property has a car and a defendant says, hey, that's my car. I don't have the physical car, but I think that's my car. And the defendant maybe goes and files some type of legal claim in Louisiana trying to convince somebody that the car is the defendant's, but the plaintiff says, that's totally false, this is my car. The defendant is asserting ownership of this physical thing that I still possess, but I think defendant's converted it or maybe defendant is successful with their legal challenge if they converted it. Can't you have -- in the physical realm, can't you have a physical conversion claim where you assert ownership of something even though the

thing is still in the possession of the plaintiff?

MR. KAUFMANN: Well, I don't think in that scenario that could be a conversion, because if there was a legal claim that was filed, you know, asserted against ownership of the claim and it was successful, then, you know, then the claimant prevailed and there would be no wrongful taking or you know, and if they -- if they were unsuccessful, then there was no interference with the property either. So there, Your Honor, I don't believe there's any mechanism. I guess the one example of depriving the property owner of ownership would be in a situation like what we discussed earlier where, you know, developing the software and not turning it over to the owner could be an example of interfering with ownership, but there there's still a deprivation.

THE COURT: Okay. Mr. Kaufmann, is there anything more you want to say about this conversion issue before I turn to your colleague on the other side?

MR. KAUFMANN: Your honor, the

only final point I would make on that is I think the CamSoft case is wholly precedent here and dealt with this issue, you know, nearly identical issue and concluded that there could be no conversion of electronic documents where there is no deprivation of the property owner. And under CamSoft, I think BearBox's claim necessarily fails for identical reasoning that there is simply no deprivation here because BearBox at all times retained a copy of the allegedly converted property and the ability to use it.

THE COURT: Okay. All right. Thank you. Let me turn to plaintiff's counsel. And Mr. Horton I know is going to take this issue. And Mr. Horton, I'll start out where the defendant's side left off. If they say hey, look, we have a Louisiana state court case that we think pretty clearly addresses this issue and, you know, of course no case is a hundred percent the same facts, but basically pretty clearly says that, you know, when it comes to electronic information, you know, can electronic information be converted? Yeah, but what we

would have to see is someone physically taking possession of that electronic information of the plaintiff's and depriving them of it. And if you simply had a scenario where the electronic information was transmitted from a plaintiff to a defendant, but the plaintiff kept a copy, defendant says that CamSoft kind of indicates that that wouldn't cut it. In your brief you cited some cases in support of your conversion claim, but do you have a Louisiana state court case that's about a conversion claim that really strongly supports your position?

MR. HORTON: Yes, Your Honor. Well, first, if I could address quickly the CamSoft decision.

THE COURT: Sure.

MR. HORTON: The CamSoft decision was a summary judgment decision, Your Honor. And what the court found was there wasn't sufficient evidence and denied summary judgment on that basis. It did not contemplate the pleading standard for conversion under Louisiana law, which is what we're talking about here in the instant motion, Your Honor.

The other thing I'd say about CamSoft is the CamSoft court also held that software was not protectable under Louisiana conversion law, which is something that has been rejected by the Louisiana supreme court and Lancium itself acknowledges is incorrect in its reply brief. And so if we're debating the correctness or applicability of CamSoft, I think both of those points are important and worth noting. In terms of --

THE COURT: I guess, Mr. Horton, just to stop you briefly on the first point, you said it in your brief to, but of course it's correct that CamSoft's summary judgment decision you say wasn't addressing the pleading standard, but what it was addressing, plaintiff says was addressing what the law requires as to these claims. You know, all the time we have instances where like in a summary judgment scenario you have to take a look at like what is required for this claim, you know, whether to plead or prove it. And, you know, you can get a lot of level information from courts about what does a claim require and what just doesn't cut

it. In a summary judgment decision that can be useful for a motion to dismiss. I guess if everything I'm saying is correct and I think it is, how come, you know, you may disagree with CamSoft for other reasons, but why is it the fact that the summary judgment decision is irrelevant here?

MR. HORTON: I think some of the facts that the CamSoft court relied on was lack of evidence on certain things. And so, Your Honor, to the extent, your point is well taken that a summary judgment opinion can inform, you know, what might be required under a pleading standard, but here the Court's discussion of those issues was focused on what the plaintiff did not do in terms of introducing evidence and sort of roundabout reached its conclusion on that basis. So I'm just suggesting that I think that's an important context that we have for CamSoft. And the other important point is, you know, the fact that there was another very wrong portion of the decision that I think Lancium's own positions are inconsistent with CamSoft and so we should note that.

THE COURT: Okay. All right. And then back to the question about, you know, the case law that you cite. Do you have a Louisiana state court case regarding conversion that you think is pretty applicable on the facts?

MR. HORTON: Well, I think first, Your Honor, I would go to the Louisiana supreme court decision in their discussion as to what constitutes conversion. We've been talking about the Dual Drilling case, the Dilio case where the supreme court lace out the seven acts that would constitute conversion. I think Your Honor is exactly right in pointing to, for example, the seventh action where the Louisiana supreme court I think very intentionally chooses the word ownership, you know, for instance, separate from possession to illustrate that concept. I also think it's important to note that act number four, possession of, withheld from the owner or possessor. That's exactly the one act of conversion that I think Lancium is trying to expand or I guess consolidate all acts of conversion into, just number four, when the others are much broader, including number one,

Your Honor, where it says possession is acquired in an unauthorized manner.

THE COURT: Just to jump in. You know, when I read the seven examples, you know, I saw it in your brief that you were trying to say like, well, four is an example of when you physically take something from another person, you know, and they don't have it anymore, but look at all these others. But when I read them, I don't know, it seems like all or almost all of them are meant to be talking about examples of just that. You know, like number one, possession is acquired in an unauthorized manner. Well, I acquired possession, I took the thing, you don't have it anymore. Number two, the channel is removed from one place to another, with the idea that you're going to exercise control over it. I took the thing. I have it. You don't have it anymore. Number three possession of the channel is transferred without authority. It's transferred, now I've got it. You don't have it anymore. You know what I mean? So I don't understand why -- why is fourth only one of the possible conversion

scenarios that deals with the physical obtaining of an item without the other side having it?

MR. HORTON: I think, Your Honor, the fact that it is explicit I think is acknowledgement that each of those other scenarios could have a situation where there's a dual possession or a partial possession. And so the fact that it is laid out explicitly, I think, acknowledges that those other possibilities exist. For example, number six, the channel was used improperly. Well, that doesn't say who is possessing the channel at the time, just that it's being used improperly. Your Honor had the example about a car where someone is making the argument that that's my car. The plaintiff says no, it isn't. I can imagine other scenarios where someone is trying to take out a loan as collateral on someone else's house. They say it's their house. Well, the plaintiff at all times had possession of their house. So there's all kinds of these examples that we think up and I think the Louisiana supreme court was explicit when articulating number four and saying that that

alone is an act, but it's not necessarily required for any of the others. And I think it's also important, Your Honor, to look at, you know, what the supreme court says when it summarizes those seven acts. You know, I think in defendant's brief they used the word deprivation in an argument today. Deprivation is the word that's used, but the full quote from the Louisiana supreme court is conversion consists of an act of deprivation of the plaintiff's possessory rights, comma, and deprivation is impairment or interference. But it goes on to say and any wrongful exercise of assumption of authority over another's goods depriving him of a possession permanently or an indefinite time is a conversion. What you've got there, Your Honor, is sort of that first statement of an act of deprivation as a conversion and them where it gives an example of a conversion. And I think that's more consistent with how the supreme court has laid out these seven types of conversion, an act of deprivation, interference with the plaintiff's possessory rights and I think that it makes

sense that in the electronic context an interference with the plaintiff's possessory rights would be interference or elimination of exclusive possession of electronic information, right? It seems to flow that it would be actionable or should be actionable under conversion if a defendant has, for example, taken a customer list or a schematic on how to build a product and then used that information to compete unfairly with the plaintiff who possessed those things and still would possess those things, you know, unlawfully taking profits and sales away from that plaintiff. I think that's exactly the type of act where there's dual possession that would be actionable under conversion. And in fact, there are decisions that we've cited to in the briefing that contemplate exactly that. The Mayville decision, Your Honor, and explicit when it talks about copied the schematic and used it to compete unfairly and illegally with the plaintiff.

THE COURT: Do you think in Mayville it's clear from the case that the owner

retained a copy of the information?

MR. HORTON: I do, Your Honor.

THE COURT: Okay. And then in terms of the -- just one more question about the way the supreme court explains the tort. I talked about number seven with the other side. Are you asserting -- are you saying in your complaint that in some way the defendants asserted ownership over the channel, which I guess here is the electronic information that passed between -- from plaintiff's side to defendant's side? And if you are, in what way did they assert ownership of it?

MR. HORTON: I think we are, Your Honor. I think there's -- I think we articulated in the briefing there's at least four acts under Louisiana supreme court law that we pled as actionable. Ownership I think is one of them and that would be in the way in which the defendants have taken the electronic information and asserted ownership in terms of modifying their business practices, soliciting and obtaining investments in their business based on their ability to practice the methods

and really making money off of it, Your Honor. They've asserted ownership over the information that way.

And if I could direct the court to a specific cite from Mayville to answer that question, Your Honor. It's to page 1 actually of the decision. And the quote is, the plaintiff left a schematic drawing with the defendant and later e-mailed a digital copy of the drawing. So that case actually contemplates exactly what we are a talking about here, e-mails the schematic and of course necessarily retaining a copy.

THE COURT: Okay. And I guess lastly and more broadly, you know, how can it be said that the defendant impaired the plaintiff's possessory rights to the electronic information if in the end the plaintiff still possessed the electronic information? Is the answer that, well, the definition of conversion is broader than impairing possessory rights or is the answer, well, they impaired our possessory rights because we no longer had sole possession of the information?

MR. HORTON: Yeah, I think that's one important articulation, Your Honor. By impairment by impairing the exclusive possession of that information, going back to the example I gave of a competitor acquiring a schematic. Now both competitors have the schematic, but previously the second competitor didn't have it, now they have it, they're making a competing product and now the market is split in purchases of that product where otherwise it wouldn't have that.

THE COURT: Okay. Anything further you wanted to add, Mr. Kaufmann on this conversion issue? Apologize. Mr. Kaufmann, before I turn to you, I should give Mr. Horton a chance to tell me if he had anything else. Mr. Horton, did you have anything else before I turn back to Mr. Kaufmann?

MR. HORTON: There are other decisions, Your Honor, that contemplate dual possession of electronic information that I'd be happy to draw the Court's attention to. One is called Total Safety. It's 2019 WL 5964971. And of course they also cited Buena Vista is another

case that's in the briefing, Your Honor. I think that was defendant's took issue with that in the reply brief saying that the allegations actually were that the electronic information was copied but then the original version was deleted. But that's actually not what happened in Buena Vista. The conversion allegation was that information was copied put in archive and then a separate allegation of conversion was that different information was deleted from the plaintiff's server, so I wanted to make that clarification for the Court.

THE COURT: I think you're talking about Euro Veritas, am I right?

MR. HORTON: I'm sorry, yes.

THE COURT: Okay. Got it. Let me go back to Mr. Kaufmann. Anything you want to say by way of brief rebuttal on the conversion issue?

MR. KAUFMANN: Yes, Your Honor. One, I'd point out that the Mayville case predates CamSoft by three years maybe. It was a 2016 decision, CamSoft was from 2019. And of course Mayville was an Eastern District of

Louisiana case which is not controlling authority where of course CamSoft is. And Your Honor, the total safety case Mr. Horton just mentioned I don't believe is cited in the briefing, so I don't believe that's an appropriate authority to assert for the first time in this argument.

THE COURT: I agree. If there are cases that the parties find after they submitted the briefing that they think are particularly helpful, we have a way to do that which is to file another supplemental brief if it's something that, that's new. And if it's not, you know, there should at least be a way to try to give the other side a fair chance to respond to it if they haven't heard it before, so I understand your point there.

Okay. Let's move on to the unjust enrichment issue. And again, I'll turn to defendant's side first. And I guess, Mr. Kaufmann, there there are two arguments you're making, if I'm seeing it correctly, as to why this claim should be dismissed. One is that the plaintiff can't satisfy the fifth element, that

there be no other adequate remedy in law and the second is the preemption claim. If you are correct on either one of them, you prevail, am I right about that?

MR. KAUFMANN: Yes, Your Honor. Although actually I believe the first point that BearBox can't establish the fifth element applies no matter what. The preemption issue is really just to -- we included that to address I think a potential argument or an ambiguity that I don't believe BearBox has actually asserted, which is if they were to assert that their unjust enrichment claim was based on non-confidential information, the briefing doesn't state that, doesn't make that assertion.

THE COURT: The presumption affirmative defense only relates to the extent that the claim is meant to refer to non-confidential information that was passed along and I think right now you're saying you don't actually think that's what the plaintiff is alleging, but just in case they are, if they were, you would have a preemption argument?

MR. KAUFMANN: That's correct.

THE COURT: Okay. I guess on the preemption issue, just briefly since we're talking about it, how come this -- you know, and the briefing basically, just for the record the briefing basically kind of is a dispute about whether federal circuit law permits an unjust enrichment claim outside of the alleged, you know, enrichment with regard to confidential information that may have been shared in a quasi contract way. And I think you acknowledge that federal circuit has said that, look, there can be some circumstances if a plaintiff is alleging that the defendant was unjustly enriched, even in the patent world when it comes to information that was provided based on the promise of confidentiality, there can be ways in which that kind of a claim can survive. But you say otherwise in a circumstance like this where we're dealing with a case of this nature, if it's non-confidential information that's transferred, federal circuit law just would not let you make an unjust enrichment claim. Is that right??

MR. KAUFMANN: That's correct,

Your Honor. There may be scenarios where an unjust enrichment claim could be based on confidential information, but not -- there can not be a situation where a conversion claim or I'm sorry, an unjust enrichment claim is based on use of non-confidential information, that wouldn't be preempted.

THE COURT: And how come this confidential/non-confidential distinction didn't come up the last time when we were having the motion to dismiss arguments about this kind of a claim?

MR. KAUFMANN: Well, Your Honor, because I think the nature of the allegations were just different previously. In the first amended complaint the allegations were that the patent, you know, what was patented was BearBox's technology and that the unjust enrichment was the incorporation of that technology into the patent. And that is -- a claim of that nature is preempted separately from the confidentiality issue. The claim is directly tied to whether the patent is the, is the basis of the unjust enrichment.

THE COURT: Okay. I mean, going back and re-reading the briefing and the decision last time, it seems like the issue there just really solely turned on, you know, was the allegation in the complaint, one, as to this unjust enrichment claim, that it turned on an assertion of inventorship and if it was, in my decision I highlighted a bunch of paragraphs where it seems like that's exactly what the plaintiff was saying, saying in my unjust enrichment claim, it's all about the real inventor. They're not. And if so, that implicated defense's preemption. Isn't that what was going on last time? And I guess, if it was or if it wasn't. Okay. Go ahead.

MR. KAUFMANN: And the preemption issue there was federal patent law governs inventorship and so that was the basis of the preemption of the prior alleged claim.

THE COURT: Okay. But maybe the alleged thing is slightly differently now and so we're getting a different argument for a motion to dismiss the claim on preemption grounds, is that right?

MR. KAUFMANN: That's correct.

THE COURT: Okay. And then you also pointed -- on the preemption issue, you pointed to the third circuit case Warinski and I know you distinguish it in in part by saying you don't think the case dealt with whether the information at issue was allegedly confidential or not. But otherwise, do you think the case just got it wrong? Do you think that the third circuit just kind of misinterpreted federal circuit precedence?

MR. KAUFMANN: Your Honor, I think they did. In fact, the Warinski case doesn't even mention the Walter's case that dealt with -- I'm sorry, not the Walter's case, the federal circuit precedent on preemption. Ultra Precision.

THE COURT: Okay. And then just on the other issue, which would I guess be entirely dispositive of the claim no matter what confidential or non-confidential information is at issue, there's no -- you know, dispute really turns on like a case like Walters where the supreme court has made it clear that, that when

it comes to this development, if there is an adequate remedy at law, even one that the plaintiff ultimately is successful on, you can't make an unjust enrichment claim. And I guess, is the way that, you know, that there is an adequate remedy of law otherwise that the plaintiff pleads such a remedy in a complaint? Is that how you know that one exists or are there other ways that you would know?

MR. KAUFMANN: Well, Your Honor, I think there are potentially other ways that you could know. I suppose you could, even if there was an unpled claim, the allegations in the complaint satisfied the elements of an unpled claim, that could be a situation again where the unjust enrichment claim couldn't proceed. Although, you know, here the trade secret claims that were stricken, you know, again, are based on the same conduct as the unjust enrichment claim. And, in fact, the trade secret claim pled unjust enrichment as alleged harm from the trade secret misappropriation. And so, you know, those claims are clearly based on the same conduct and the same with the conversion claim.

And, Your Honor, courts that have dealt with this issue like the Shaw case have found that, you know, it's not whether -- even if the claim fails as a matter of law, you know, the Shaw case found that two other claims based on the same conduct should also be dismissed as a matter of law, but the allegation of those claims based on the same conduct as the unjust enrichment still precluded the unjust enrichment claim.

THE COURT: And just to parse that, you know, like what it means to have an alternative remedy at law. Let's say I had a complaint and there was like five claims and the last of which was unjust enrichment and they were all about the same conduct. You know, like, number one was breach of contract, number two was conversion, three, four, whatever, and then five is unjust enrichment and the defendant moves to dismiss -- and they're all under Louisiana law -- and defendant moves to dismiss all five and the Court looks at them and says, you know what, not one is dismissed. The plaintiff can't make out a plausible claim.

Count two, dismissed as well. Plaintiff just simply cannot make out a plausible claim. Same with count three, same with count four and then you get to count five and you ask yourself, does the plaintiff have a, you know, an alternative remedy at law? Well, from the one hand the plaintiff pleaded that they did. You know, they pleaded four other claims based on the same basic conduct, but that the Court that's deciding whether they do just got through saying they don't. You know, they -- like the court looked at it and plaintiff can't make out a claim under count one, breach of contract or count two conversion. If you have a scenario like that, how can it be said that there is an adequate remedy at law if the Court says, as to all the other things the plaintiff tried, no.

MR. KAUFMANN: Well, Your Honor, that's the guidance that the Louisiana supreme court has given and that's the scenario that the Court found in Shaw. Although here, I think we don't even need to get to that question, because the trade secret claim, you know, as Your Honor knows, those claims were not dismissed because

they failed to plead an adequate trade secret claim. They were stricken because they were untimely, so there's not an issue of whether other claims could be pled that set forth a viable claim. And in fact, in their briefing on the motion to strike I believe BearBox was adamant that they had adequately alleged the elements of a trade secret claim and so because, you know, that claim could have been available to them, we don't -- we don't even need to get to the issue of, you know, if the conversion claim is stricken could that -- is there still a claim they could have availed themselves of. There is and it was the trade secret claims, at least.

THE COURT: Okay. Anything further you want to say on this unjust enrichment issue, Mr. Kaufmann?

MR. KAUFMANN: No, Your Honor.

THE COURT: Okay. Let me then turn to Mr. Horton on plaintiff's side with these issues and why don't we start with the fifth element issue. There I guess, you know, why doesn't Walter's just settle the issue? The

supreme court case from Louisiana supreme court. The other side says it pretty clearly, in their view, says that, look, if you plead another type of claim based on the same basic content as an unjust enrichment claim, even if that other claim gets dismissed, you had an alternative essential remedy. And so you can't plead the fifth element. And the defendant would say, heck, even in the recent case, federal cases recognize that too like Andretti or Cytogel Pharma. How comes Walters doesn't just settle the issue?

MR. HORTON: Yes, Your Honor. I think we recognize in the briefing there seems to be a split in authority here. We recognize the Walters decision, but there are decisions subsequent to Walters and the Hall case addresses Walters and distinguishes it. And the split seems to be, Your Honor, federal court versus state court and we think that makes sense here because in federal court, now federal rule civil procedure 8 which allows for pleading in the alternative. And so we think because we're in federal court with this case that the split

in authority should give, allow the unjust enrichment claim to go forward.

THE COURT: I guess just to stop you there, Mr. Horton. You mentioned Hall as distinguishing Walters, but the way it distinguished Walters, not even sure this is a correct reading of Walters, but the way it distinguished it was by saying well, Walters was only talking about a scenario where the alternative relief was a tort claim. And then it went on to talk about how that wasn't the case in Hall. Here, even if the way that Hall was distinguishing Walters wouldn't help you, right, because you've got alternative tort claims that you're pleading, isn't that right?

MR. HORTON: That was said in the Hall case, Your Honor, that's correct. The Hall case also went on to say that the liberality of rule 8 should be recognized and the Hall case cites to the Richard versus Wal-mart case which again relies on rule 8 which allows for pleading in the alternative in federal court.

THE COURT: And on the rule 8 issue a number of cases that you cite reference

rule 8. But I mean, you know, there are cases that the other side points to that say, and I'm not sure why this is wrong, whether rule 8 or rule 9 is a matter of federal procedure allows a party to plead in the alternative, that doesn't have much to do with what's the substance of the elements of the claim under state law. And if the substance of an element of the claim was that you can't have another form of potential relief, it wouldn't matter what rule 8 or 9 lets you do because the actual substantive claim wouldn't permit a scenario like this. How does rule 8 or 9 get you out of this problem?

MR. HORTON: Yeah, so I think, Your Honor, you alluded to this earlier, which is to say that, you know, how do you know which cause of action is going to provide for the remedy the plaintiff seeks until you know? And at the pleading stage we don't know. And so I think, you know, for conversion I think we feel that the remedy is a disgorgement of the defendants ill gotten gains and we think we're entitled to that under conversion. But if it turns out that that's not right, then unjust

enrichment is meant to plug a gap in the law in terms of remedies in what the plaintiff might recover. And so until we know that for sure, I think our positions is that unjust enrichment should stay in the case to continue to plug that potential gap, until we know for certain whether there's a gap or not. And I think that's what rule 8 contemplates in the federal procedure context.

THE COURT: All right. And with regard to the preemption issue, I guess one question I have for you is the other side is only making that argument to the extent that your unjust enrichment claim is even alleged to implicate information that is non-confidential. You could tell me that the answer to that is no, actually no, the whole claim is about information that is asserted to have been confidential on the plaintiff's side. Is that what's going on or does your unjust enrichment claim also implicate some information that wasn't confidential?

MR. HORTON: Well, Your Honor, I think the claim certainly does contemplate

information that is confidential. I think we've said that in the pleading. I think we said that in the briefing. At the pleading stage I would be hesitant to make a representation whether it's all constitutes confidential or not. And I don't think the Court needs to reach that conclusion, because the Rosinski case is on point and it doesn't contemplate confidentiality at all, it's simply saying that in order to avoid preemption you simply just cannot seek a patent-like remedy based on patent infringement. And we don't have that here. We're not seeking patent infringement damages. We don't even have a patent. I think we're contending that we should have the patent, but we don't yet. And in Warinski the facts are even less favorable to the plaintiff there because there the plaintiff did have the patent and the third circuit said as long as you're not asking for patent infringement damages then unjust enrichment cannot and will not be preempted. So I think that's really the only issue that the Court needs to address.

THE COURT: And so I guess you're

saying -- is what you are saying to me, yes, Judge, you should understand the unjust enrichment claim to be alleging the unjust enrichment of the defendants with regard to both confidential and non-confidential information, is that right?

MR. HORTON: I guess what I'm saying, Your Honor, is I think the Court's decision doesn't need to parse things that finely. It can simply be a decision based on the fact that the plaintiff is not seeking at like remedies under unjust enrichment and on that basis cannot be preempted by patent law.

THE COURT: I'm asking partly from an efficiency perspective because if you told me the only thing you're alleging was used and generated unjust enrichment was confidential information, then, you know, I don't have to make a decision on a whole big part of the briefing here. But if you're telling me the opposite, then I might, so that's why I'm asking.

MR. HORTON: Understood, Your Honor.

THE COURT: So humor me, which one is it?

MR. HORTON: Fair enough, Your Honor. Confidential information.

THE COURT: So only confidential information is being alleged to have been used in a way that unjustly enriched the other side?

MR. HORTON: I think the pleading is broader than that, Your Honor, but that's the claim I see going forward, is unjust enrichment based on confidential information.

THE COURT: Okay. All right. Anything further you wanted to add, Mr. Horton?

MR. HORTON: No, Your Honor.

THE COURT: Okay. All right. Mr. Kaufmann, anything more you want to say about the unjust enrichment issue?

MR. KAUFMANN: Your Honor, I'd just reiterate the point Your Honor noted that controlling precedent here, Walters in the Louisiana supreme court and the fifth circuit precedent have established that unjust enrichment can not be pled in the alternative. Here, rule 8, federal rule 8 does not save the

claim as you noted. It is a substantive element of the claim that there can be no other remedy at law and here BearBox's own allegations show that there was other claims they could have availed themselves of and so here the unjust enrichment claim just can't be sustained.

THE COURT: Okay. All right. Thanks, counsel. Appreciate your arguments. I'll take a short time to think about it and then I'll intend to issue a short report and recommendation in the very near future so that the parties will have an answer here. Appreciate everyone's time today. Wish everyone continued health and safety. Unless there's anything further, we can end our teleconference today and go off the record. Take care, everybody.

(End at 1:58 p.m.)

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

BEARBOX LLC and AUSTIN STORMS,	)	
	)	
Plaintiffs,	)	
	)	
v.	)	C.A. No. 21-534-MN-CJB
	)	
LANCIUM LLC, MICHAEL T. MCNAMARA, and RAYMOND E. CLINE, JR.	)	**FILED UNDER SEAL**
	)	
Defendants.	)	

DEFENDANTS' OPENING BRIEF IN SUPPORT OF THEIR
MOTION FOR SUMMARY JUDGMENT

Dated: June 15, 2022

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2	Reply Report of Frank McCamant, dated May 19, 2022
3	Expert Report of Dr. Stan McClellan, dated April 5, 2022
4	Reply Expert Report of Dr. Stan McClellan, dated May 20, 2022
5	Excerpts from Deposition Transcript of Stanley A. McClellan
6	Excerpts from Ercot Market Mechanisms Report prepared by Shams Siddiqi, Ph.D., dated May 6, 2022
7	Excerpts from Deposition Transcript of Austin Storms
8	Confidentiality Agreement between BearBox, LLC and Glidepath Development LLC dated December 10, 2018, produced by BearBox in this case with Bates numbers BB10000736 – BB10000741
9	Email from Austin Storms to Todd @buysellads attaching files, produced by BearBox in this case with Bates numbers BB00000911 – BB00000923
10	Email from Austin Storms to Michael McNamara attaching BearBox's Product Details Summary, produced by BearBox in this case with Bates numbers BB00000090 – BB00000097
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12	WO 2019/139632 Patent Application, produced by Lancium in this case with Bates numbers LANCIUM00000050 - LANCIUM00000093
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17	U.S. Patent No. 10,608,433
18	Text message report between Austin Storms and Michael McNamara dated between 5/4/2019 – 5/9/2019, produced by BearBox in this case with Bates numbers BB10004959 – BB10004961

19	Complaint filed by Lancium against Layer1 Technologies in the Western District of Texas on August 14, 2020, produced by Lancium in this case with Bates numbers LANCIUM00016546 – LANCIUM00016554
20	Excerpts from Plaintiffs' Supplemental Objections and Responses to Defendants' First Set of Interrogatories (Nos. 1-9), dated November 9, 2021
21	Excerpts from Defendants' Second Set of Supplemental Response to Plaintiffs' Interrogatory No. 3, dated December 23, 2021
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23	Excerpts from Plaintiff's Objections and Responses to Defendants' First Set of Requests For Admission (Nos. 1-33), dated November 22, 2021

I. INTRODUCTION

Plaintiffs Austin Storms ("Storms") and BearBox LLC ("BearBox") have three remaining claims against Defendants Lancium LLC ("Lancium"), Michael T. McNamara ("McNamara"), and Raymond E. Cline, Jr. ("Cline"). First, Plaintiffs assert a claim that Storms is the sole inventor of U.S. Patent No. 10,608,433 (the "'433 patent") (Count I of the Second Amended Complaint). Second, in the alternative, Plaintiffs assert a claim that Storms is a joint inventor of the '433 patent (Count II). Third, Plaintiffs assert a claim for conversion of so-called "BearBox technology" (Count V). All of these claims are based on information allegedly provided by Storms to McNamara via their only three communications: (1) a May 3, 2019 conversation at a group dinner attended by several other competitors following a cryptocurrency mining summit; (2) a series of text messages from May 3-9, 2019 following the dinner; and (3) a single email that Storms sent McNamara on May 9, 2019. Based on these extremely limited communications, and despite Defendants' years of innovation and investment in research and development, Plaintiffs allege that Defendants wrongly filed a patent on Storms' alleged invention more than five months after Storms and McNamara last communicated. Likewise, Plaintiffs seek millions of dollars in damages for Defendants' alleged conversion of a small amount of allegedly confidential information in one attachment to Storms' email by purportedly using that information to modify Defendants' Smart Response™ software that is used to control datacenters.

Plaintiffs' claims, however, all fail as a matter of law. Indeed, Plaintiffs' inventorship claims are based on a fundamentally incorrect interpretation of two key claim terms found in every claim of the '433 patent. Plaintiffs rely on this misinterpretation to assert that Storms' "BearBox technology" discloses the inventions of the '433 patent even though these technologies are not only different, they are inconsistent. Plaintiffs' sole inventorship claim thus fails as a matter of law because there is no evidence, much less clear and convincing evidence that could meet their heavy

burden, that Storms conceived of or communicated the inventions of the '433 patent, as properly construed, to Defendants. Likewise, regarding Plaintiffs' joint inventorship claims, they cannot prove, much less by clear and convincing evidence, that Storms made a significant contribution to the '433 patent. In addition, the limited communications between Storms and McNamara cannot, as a matter of law, establish that Storms and McNamara collaborated on the inventions of the '433 patent, as is required for a joint inventorship claim. Furthermore, Plaintiffs' conversion claim is barred by the applicable one-year statute of limitations and is preempted by federal patent law because it is based on the alleged use of information that, as a matter of law, is not confidential. Accordingly, the Court should grant summary judgment for Defendants on all three of Plaintiffs' remaining claims.

II. FACTUAL BACKGROUND

A. Lancium and Its Technology

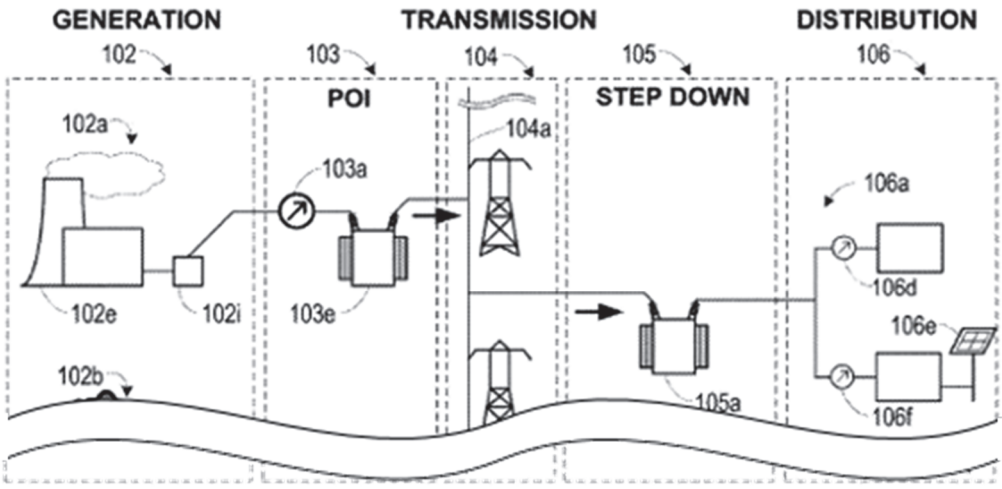
Lancium is a technology company founded in 2017, to, among other things, create software and intellectual property solutions that enable more renewable energy on the nation's power grid, and Lancium began to do so immediately. For example, in February 2018, Lancium, including McNamara and Cline, filed a patent application titled "Method and System for Dynamic Power Delivery To a Flexible Datacenter Using Unutilized Energy Sources," that published as International Publication No. WO 2019/139632A1 (the "'632 application") and later issued as U.S. Patent No. 11,016,456. SOF ¶¶6-9; Ex. 12; Ex. 13. Lancium's technology, as explained in the '632 patent, permits a "flexible data center" to "ramp-up to a fully online status, ramp-down to a fully offline status, or dynamically reduce power consumption," where "the flexible datacenter may perform computational operations, such as blockchain hashing operations" (e.g., Bitcoin mining) "with little to no energy costs, using clean and renewable energy that would otherwise be wasted." Ex. 12 at [0022].

Lancium continued to innovate and by the end of 2018 had filed numerous other patent applications that led to numerous patents such as U.S. Patent No. 10,873,211 (filed September 13. 2018) titled "Systems and Methods for Dynamic Power Routing with Behind-the-Meter Energy Storage," U.S. Patent No. 10,444,818 (filed October 30, 2018) titled "Methods and Systems for Distributed Power Control of Flexible Datacenters," and U.S. Patent No. 10,367,353 (filed October 30, 2018) and "Managing Queue Distribution between Critical Datacenter and Flexible Datacenter." D.I. 28 ¶ 24.

B. United States Patent No. 10,608,433

Through 2019, Lancium continued to innovate and invest in research and development, eventually leading to the filing of U.S. Provisional Patent Application No. 62/927,119 on October 28, 2019 (SOF ¶1; Ex. 21 at 32-33 and documents cited therein) and the follow-on U.S. Nonprovisional Patent Application No. 16/702,931 on December 4, 2019, which issued as the '433 patent, titled "Methods and Systems for Adjusting Power Consumption Based on A Fixed-Duration Power Option Agreement." SOF ¶¶2-4; Ex. 17.

The technology of the '433 patent at issue in this case relates to systems and methods for adjusting the amount of power available on the electrical grid. As depicted in its Figure 1, of which an excerpted version is shown below, an electrical grid typically includes: (i) power generation stations (e.g., nuclear power plants 102a) that produce electricity, (ii) transmission lines 104 that carry the power from the generation stations to demand centers (i.e., consumers), and (iii) distribution networks 106 that carry power to individual consumers. Ex. 17 at 1:26-4:8. To maintain stability on the grid, the grid operator strives to maintain a balance between the amount of power entering the grid (via generators) and the amount of grid power used by loads (e.g., customers in the distribution segment 106). Ex. 17 at 4:9-13.



PRIOR ART
FIGURE 1

In an effort to maintain this balance, grid operators, such as Independent Service Organizations ("ISOs") have various tools at their disposal, some of which are called ancillary services. Ancillary services are programs that give ISOs some amount of control over the amount of power being consumed by loads on the grid in real time in order to balance the amount of power being consumed with the amount of power available.[1] In order to provide this ability, specially qualified loads can bid into the "day-ahead" ancillary services market[2] where the loads offer a specific minimum amount of load (i.e., power in megawatts (MW)) that they commit to use during specific hourly periods the following day (i.e., the "operating day"). If the offer is accepted (i.e., "awarded") by the ISO, the ISO will pay the load for guaranteeing that the load will use the committed minimum amount of power during each specific hourly period the next day while simultaneously providing the ISO with the option to reduce (i.e., "curtail") that power use in real

[1] *See, e.g.,* Ex. 1 at 18 ("ERCOT needs system capacity for two reasons: first for energy dispatch to meet real time system demand, and second as a reserve available to respond to large and small operational fluctuations. This reserve capacity is what is used for Ancillary Services…")

[2] *See, e.g.,* Ex. 1 at 24 ("Qualified LRs ... may provide operating reserves in the ERCOT AS markets.")

time that next day by up to the committed amount, in order to balance generation and consumption of power on the grid.[3] The load is obligated to use at least the committed minimum power amount;[4] otherwise, the ISO could not exercise its option in real time to reduce load on the network up to the committed power amount. Plaintiffs do not dispute how ancillary service programs work.[5]

C. Austin Storms and BearBox

Austin Storms and his company BearBox, in late 2018 and early 2019, sought to develop cryptocurrency mining technology. D.I. 103 at ¶ 29. In particular, Plaintiffs worked to develop a portable container called a "BearBox" that contained cryptocurrency miners (i.e., computers that can perform cryptocurrency mining operations). Ex. 7 at 45:2-17. BearBox, however, only ever built one BearBox, which it eventually sold for no profit. Ex. 7 at 45:18-23; 48:6-7.

D. Storms' Communications with McNamara

On May 3, 2019, Storms attended the Fidelity FCAT Mining Summit in Boston where he explained he was "[g]onna poke around and figure out if anyone else is doing what we're working on." Ex. 16 at BB10003996. At the conference, Storms met McNamara and the two went to a group dinner attended by approximately six others, including competitors in the Bitcoin mining field. SOF ¶¶10-11; D.I. 41 at ¶¶ 38, 40-41; D.I. 28 at ¶¶ 38, 40-41. Storms and McNamara's conversation at the dinner occurred in front of these other attendees, and this was their only oral

[3] Ex. 6 at 17 ("Awarded Ancillary Service Offers, specifying … MW … and price, for each hour of the awarded offer."); Ex. 1 at 24 ("Load Resources that are scheduled or selected in the ERCOT Day-Ahead AS Markets are eligible to receive a capacity payment regardless of whether they are actually curtailed.")

[4] Ex. 6 at 14 ("Ancillary Service (AS) awards are physically binding.")

[5] Dr. Siddiqi describes ancillary service market operation in significant detail in his expert report; Plaintiff's ISO market expert Mr. McCamant states that Dr. Siddiqi's "report is an accurate account of how the ERCOT market functions," and does not dispute the factual operation of the ancillary service market. Ex. 2 at 5.

communication. SOF ¶¶11, 14; D.I. 41 at ¶ 43; D.I. 28 at ¶ 43; Ex. 23 at 9. Shortly thereafter, Storms wrote to an individual, Ben Hakes, with whom he had been working and explained that: "The guys at Lancium ***are doing*** what ***we are trying to do exactly***, but they don't have a container builder or software team yet. Mike's pretty interested in my solution."[6] Ex. 16 at BB10004001.[7]

Following the dinner, from May 3 to May 9, 2019, Storms and McNamara exchanged a handful of text messages, which mostly involved McNamara's request for specifications on the BearBox container. SOF ¶12; Ex. 18. And on May 9, 2019, Storms emailed McNamara a specification sheet for his BearBox as well as a handful of other documents. *See* SOF ¶13; Ex. 10. This was the last communication between Storms and any of Defendants. SOF ¶13; D.I. 103 at ¶ 36.

Following receipt of Storms' email, McNamara forwarded it to a few others at Lancium on May 9, 2019, explaining that "[w]e met this guy at the fidelity conference. … His box seems very expensive though." Ex. 14. There were no responses to McNamara's email.

In addition, none of the attachments to Storms' email were marked as confidential and Storms has testified that three of the attachments were publicly available product specification sheets. SOF ¶16; Ex. 7 at 213:5-214:5; Ex. 10. The fourth attachment contains the BearBox product specification sheet as well as a drawing titled "BearBox Automatic Miner Management System Version 1.0" that Storms also posted on BearBox's public Twitter account. SOF ¶¶19-20; *Compare* Ex. 10 at BB00000092, *with* Ex. 11 at BB00000718. Plaintiffs also do not assert that this attachment is confidential. SOF ¶18; Ex. 7 at 217:13-23. The only reference to confidentiality in

[6] All emphases added unless otherwise noted.

[7] Storms also stated "[T]hey want my logic for curtailing miners on DA and RTMB LMP – all over dinner Friday night and several bottles of wine, they told me they were looking into Digital Shovel, but their Schneider Electric/Siemens engineer was worried about 480/277v because of potential liability…." Ex. 16 at BB10004002.

the email or its attachments was a boilerplate "confidentiality notice" at the bottom of email stating that "[t]his email communication ***may*** contain private, confidential, or legally privileged information intended for the sole use of the designated and/or duly authorized recipient(s)." SOF ¶16; Ex. 7 at 217:6-12; Ex. 10 at BB00000090. Moreover, Storms did not have a confidentiality or nondisclosure agreement with McNamara or any of Defendants although he did have such agreements with other third parties. *See, e.g.*, Ex. 7 at 70:4-6, 124:7-13; Ex. 8.

Plaintiffs learned of the '433 patent and Defendants allegedly wrongful use of BearBox's technology on August 17, 2020 when Storms saw a press release about a lawsuit Lancium filed for infringement of the '433 patent. SOF ¶22; D.I. 103 at ¶¶ 52-54. Nonetheless, and despite the fact that Storms never sought to file a patent on his alleged invention, Plaintiffs waited until April 14, 2021 to file this lawsuit. Ex. 7 at 290:7-16. Indeed, Plaintiffs did not file this lawsuit until after a press release was issued announcing the settlement of the earlier infringement suit regarding the '433 patent and that the defendant in that lawsuit licensed Lancium's intellectual property. D.I. 103 at ¶¶ 56-57.

E. Procedural History

Plaintiffs' claims in this case have continually changed since the original Complaint was filed on April 14, 2021. D.I. 1. Plaintiffs' originally asserted claims, *inter alia*, for trade secret misappropriation, but a little over a month later withdrew these claims and filed an Amended Complaint. *See* D.I. 19. Defendants then moved for judgment on the pleadings regarding Plaintiffs' claims for conversion, unjust enrichment, and negligent misrepresentation, which the Court granted dismissing Plaintiffs' conversion and unjust enrichment claims without prejudice as preempted by federal patent law and dismissing the negligent misrepresentation claim with prejudice. D.I. 92; D.I. 97. Two days before the close of fact discovery, Plaintiffs then filed the Second Amended Complaint asserting new, different conversion and unjust enrichment claims and

re-asserting claims for trade secret misappropriation. D.I. 89 (order adopting stipulated, amended scheduling order); D.I. 103 (Second Amended Complaint). The Court, however, granted Defendants' motion to strike the re-asserted trade secret claims. *See* 4/25/22 Minute Entry. Magistrate Judge Burke has also recommended granting Defendants' motion to dismiss the new unjust enrichment claim, and Plaintiffs have not objected to this recommendation.[8] D.I. 143.

Accordingly, Plaintiffs have three remaining claims: First, Plaintiffs' claim that Storms should be substituted as the sole inventor of the '433 patent (Count I). Second, Plaintiffs' alternative claim that Storms should be found to be a joint inventor of the '433 patent (Count II). Third, Plaintiffs' claim that Defendants converted certain technology relating to energy arbitrage that Storms purports to have provided to McNamara (Count V). D.I. 103. As explained herein, summary judgment is appropriate because each of these claims fail as a matter of law.

III. LEGAL STANDARD

The court shall grant summary judgment if the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(a). To defeat a motion for summary judgment, the nonmoving party must "do more than simply show that there is some metaphysical doubt as the material facts." *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 586 (1986). A factual dispute is only genuine where "the evidence is such that a reasonable jury could return a verdict for the nonmoving party." *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 247-48 (1986). The "mere existence of some alleged factual dispute between the parties will not defeat an otherwise properly supported motion for summary judgment." *Id.*

IV. ARGUMENT

[8] Defendants also have pending objections to Magistrate Judge Burke's recommendation to deny Defendants' motion to dismiss Plaintiffs' new conversion claim. D.I. 146.

A. Plaintiffs' Sole Inventorship Claim Fails As A Matter Of Law Because There Is No Evidence Austin Storms Conceived Of The Inventions Claimed In The '433 Patent Or Communicated The Inventions To Defendants.

The '433 patent invented systems and methods that can be used to adjust power consumption of computing systems (e.g., cryptocurrency or Bitcoin miners) that can be used, *inter alia*, to participate in ancillary services programs. Although Plaintiffs have previously avoided specifically explaining how they claim Storms' so-called "BearBox technology" encompasses and relates to the claimed technology of the '433 patent, during expert discovery it became clear that Plaintiffs' inventorship claims are premised on a fundamentally incorrect interpretation of two key claim terms appearing in every claim of the '433 patent: (1) "power option agreement"; and (2) "minimum power threshold." This is significant because resolution of Plaintiffs' inventorship claims requires proper construction of these claim terms, and there is simply no evidence that Storms conceived of, much less communicated, the inventions of the '433 patent as properly construed. Thus, summary judgment denying Storms claim of sole inventorship of the '433 patent should be granted.

1. Applicable Legal Principles

a. Inventorship

Inventorship is a question of law premised on underlying questions of fact. *Eli Lilly and Co. v. Arandigm Corp.*, 376 F.3d 1352, 1362 (Fed. Cir. 2004). Patent issuance creates a presumption that the named inventors are the true and only inventors, and that people not named are not to be inventors. *Scott v. Zimmer, Inc.*, 889 F. Supp. 2d 657, 662 (D. Del. 2012). A person seeking to add himself/herself as an inventor, therefore, "must meet the heavy burden of proving [his/her] case by clear and convincing evidence." *Id.*; *Eli Lilly*, 376 F.3d at 1358. Inventorship, therefore, is often decided as a matter of law, including at summary judgment. *See*, *e.g.*, *Symantec Corp. v. Computer Associates Intern., Inc.*, 522 F.3d 1279, 1295-96 (Fed. Cir. 2008) (affirming

summary judgment of no inventorship); *Univ. of Utah v. Max-Planck-Gesellschaft Zur Foerderung Der Wissenschaften E.V.*, 851 F.3d 1317 (Fed. Cir. 2017) (same); *Wagner v. Simpson Performance Prod., Inc.*, Civ. No. 5:18-CV-00123-KDB-DCK, 2021 WL 411144, at *2 (W.D.N.C. Feb. 5, 2021), aff'd sub nom. *Wagner v. Ashline*, No. 2021-1715, 2021 WL 5353889 (Fed. Cir. Nov. 17, 2021) (granting summary judgment of no inventorship because Plaintiff failed to provide sufficient evidence to corroborate its claim of co-inventorship); *Eli Lilly*, 376 F.3d at 1364 (reversing jury's verdict that unnamed inventor was a joint inventor because the evidence was insufficient to meet the clear and convincing standard).

The inventorship analysis first requires construction of each disputed claim to determine the subject matter encompassed. *Gemstar-TV Guide Int'l, Inc. v. Int'l Trade Comm'n*, 383 F.3d 1352, 1381-82 (Fed. Cir. 2004). Then, "[t]o state a claim for complete substitution of inventors under Section 256," a plaintiff must establish that "(1) the erroneously omitted inventor conceived the invention claimed in the patent *and* (2) the named inventor on the patent did *not* conceive the invention." *Iceotope Grp. Ltd. v. LiquidCool Sols., Inc.*, No. 20-CV-2644, 2022 WL 204923, at *2 (D. Minn. Jan. 24, 2022) (emphasis in original) (citing to *CODA Dev. S.R.O. v. Goodyear Tire & Rubber Co.*, 916 F.3d 1350, 1358 (Fed. Cir. 2019)).

Ultimately, conception is the touchstone of inventorship. *Gemstar*, 383 F.3d at 1381. Conception is "the formation in the mind of the inventor of a definite and permanent idea of the complete and operative invention." *Id.* Conception is complete when one of ordinary skill in the art could construct the apparatus, perform the process, or make the composition without unduly extensive research or experimentation. *Trovan Ltd. v. Sokymat SA, Irori*, 299 F.3d 1292, 1302 (Fed. Cir. 2002). A would-be inventor's contribution must have been to the conception of the claims, not something outside the claims. *Scott*, 889 F. Supp. 2d, at 662.

A would-be inventor's proof of conception, however, must be more than simply his/her testimony. "To prove [his or her] contribution, the purported inventor must provide corroborating evidence of any asserted contributions to the conception." *Acromed*, 253 F.3d at 1379 (internal citations and quotations omitted); *see also Ethicon, Inc. v. U.S. Surgical Corp.*, 135 F.3d 1456, 1461 (Fed. Cir. 1998). Indeed, a would-be inventor's testimony regarding their own inventorship claim is "regarded with skepticism." *Scott*, 889 F. Supp. 2d at 664. Would-be inventors, therefore, must supply evidence to corroborate their testimony. *Symantec*, 552 F.3d at 1295. The sufficiency of the corroborating evidence is evaluated under a rule of reason analysis, which requires that an evaluation of all pertinent evidence be made so that a sound determination of the credibility of the alleged inventor's story may be reached. *Id.*; *Gemstar*, 383 F.3d at 1382.

b. Claim Construction

"When the parties raise an actual dispute regarding the proper scope of these claims, the court, not the jury, must resolve that dispute." *O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co*., 521 F.3d 1351, 1360 (Fed. Cir. 2008). A district court "may engage in claim construction during various phases of litigation" and is "well within its power to clarify, supplement, and even alter its construction" of disputed terms "in its summary judgment order." *Level Sleep LLC v. Sleep No. Corp.*, No. 2020-1718, 2021 WL 2934816, at *3 (Fed. Cir. July 13, 2021).

"Words of a claim are generally given their ordinary and customary meaning, which is the meaning a term would have to a person of ordinary skill in the art after reviewing the intrinsic record at the time of the invention." *O2 Micro*, 521 F.3d at 1360 (citing *Philips v. AWH Corp*., 415 F.3d 1303, 1312-13 (Fed. Cir. 2005)). "A determination that a claim term 'needs no construction' or has the 'plain and ordinary meaning' may be inadequate when a term has more than one 'ordinary' meaning or when reliance on a term's 'ordinary' meaning does not resolve the parties' dispute." *Id.* at 1361. "To determine the meaning of the claims, courts start by considering the

intrinsic evidence," which "includes the claims themselves, the specification, and the prosecution history." *Philips*, 415 F.3d at 1312-1314. "[C]laims 'must be read in view of the specification, of which they are a part.'" *Id*. "[T]he specification 'is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.'" *Id*. Expert testimony may aid a court in understanding the underlying technology and determining the particular meaning of a term in the pertinent field, but an expert's conclusory, *unsupported* assertions as to a term's definition are entirely unhelpful to a court. *Phillips*, 415 F.3d at 1317 (emphasis in original).

2. There Is No Evidence That Austin Storms Communicated The Inventions Of The '433 Patent To Defendants.

a. Proper Claim Construction of "Power Option Agreement"

Claim Term	Defendants' Construction	Plaintiffs' Construction
"power option agreement" ('433 patent, independent claims 1, 17, & 20)	an agreement between a power entity associated with the delivery of power to a load and the load, wherein the load provides the power entity with the option to reduce the amount of power delivered to the load up to an agreed amount of power during an agreed upon time interval such that the load must use at least the amount of power subject to the option during the time interval	Plain and ordinary meaning

On October 15, 2021, the parties indicated to the Court that they did not seek claim construction at that time and would advise, or seek construction, if developments suggested otherwise. *See* D.I. 61; D.I. 63. During expert discovery it has become apparent that Plaintiffs seek to ignore the clear meaning of "power option agreement" as established by the intrinsic evidence, and instead assert a purported "plain and ordinary" meaning that they contort to support their

inventorship claims. The intrinsically-supported clear meaning of power option agreement is: "an agreement between a power entity associated with the delivery of power to a load and the load, wherein the load provides the power entity with the option to reduce the amount of power delivered to the load up to an agreed amount of power during an agreed upon time interval such that the load must use at least the amount of power subject to the option during the time interval." However, Plaintiffs improperly depart from the intrinsic evidence and instead use a purported "plain and ordinary" meaning under which their expert, Dr. Stanley McClellan, describes the power option agreement as "an agreement [by the load] to purchase a certain amount of power at a certain time at a certain price." Ex. 3 at ¶ 49; Ex. 5 (McClellan Dep. Tr.) at 90:2-13. Dr. McClellan further contends that the "option" is the load "buying power ahead of time," which the load can then decide to use the power or not. Ex. 5 at 157:1-18. Plaintiffs' interpretation of "power option agreement" is fundamentally inconsistent with the patent specification, which specifically describes and provides examples related to the term. As such, construction of this term is needed because "[a] determination a claim term 'needs no construction' or has the 'plain and ordinary meaning' may be inadequate when a term has more than one 'ordinary' meaning or when reliance on a term's 'ordinary' meaning does not resolve the parties' dispute." *O2 Micro*, 521 F.3d at 1361.

It is well-established that "claims must be read in view of the specification, of which they are a part" and "the specification is always highly relevant to the claim construction analysis. Usually it is dispositive; it is the single best guide to the meaning of a disputed term." *Phillips*, 415 F.3d at 1315 (internal quotations omitted). Here, the specification is dispositive and explains in great detail that a "power option agreement" is an agreement between a power entity (such as a grid operator) and a load (such as a datacenter) that gives the power entity the option to reduce the

amount of power delivered to the load, up to an agreed amount during an agreed time interval.[9]

Indeed, the '433 patent explains that:

> "In general, a power option agreement is an agreement between a power entity 1140 associated with the delivery of power to a load (e.g., a grid operator, power generation station, or local control station) and the load (e.g., the datacenters 1102-1106). As part of the power option agreement, the load (e.g., load operator, contracting agent for the load, semi-automated control system associated with the load, and/or automated control system associated with the load) provides the power entity 1140 with the right, but not obligation, to reduce the amount of power delivered (e.g., grid power) to the load up to an agreed amount of power during an agreed upon time interval." Ex. 17 at 43:46-57.

The specification further explains that the power option agreement gives the power entity this optionality as a tool to balance the supply and demand for power on the grid:

> "The power option agreement may be used by the power entity 1140 to reserve the right to reduce the amount of grid power delivered to the load during a set time frame (e.g., the next 24 hours). For instance, the power entity 1140 may exercise a predefined power option to reduce the amount of grid power delivered to the load during a time when the grid power may be better redirected to other loads coupled to the power grid. As such, the power entity 1140 may exercise power option agreements to balance loads coupled to the power grid." Ex. 17 at 44:3-12.

The '433 patent even gives an example of how a power option agreement could work:

> "To illustrate an example, a power option agreement may specify that a load (e.g., the datacenters 1102-1106) is required to use at least 10 MW or more at all times during the next 12 hours. … In order to comply with the agreement, the load must subsequently operate using 10 MW or more power at all times during the next 12 hours. This way, the load can accommodate a situation where the power entity 1140 exercises the option. Particularly, exercising the option may trigger the load to reduce the amount of power it consumes by an amount up to 10 MW at any point during the 12 hour interval. By establishing this power option agreement, the power entity 1140 can manipulate the amount of power consumed at the load during the next 12 hours by up to 10 MW if power needs to be redirected to another load or a reduction in power consumption is needed for other reasons." Ex. 17 at 44:17-35.

Furthermore, the '433 patent explains that a load may enter into a power option agreement and

[9] The prosecution history does not alter the meaning of "power option agreement" as established by the specification because the '433 patent issued without any rejections by the examiner. *See* SOF ¶5; Ex. 15 at BB0000553-62 (1/27/20 Notice of Allowance)

give the power entity the ability to exercise the option in return for monetary consideration from the power entity, such as payment from the power entity or a reduced price for power. Ex. 17 at 43:65-44:2.

The meaning of the term that Plaintiffs apply is flatly inconsistent with the meaning established by the '433 patent's specification. As an initial matter, although Plaintiffs' expert, Dr. McClellan, purported to apply the "plain and ordinary meaning" of the term to his inventorship analysis, he asserts that a system that "calculated profitability at distinct time intervals" demonstrates conception of claim elements including this term, even though that has nothing do with a "power option agreement" as described by the '433 patent. Ex. 3 at ¶¶ 49, 62. And Dr. McClellan confirmed his misinterpretation of the claim at his deposition. Indeed, Dr. McClellan testified that he interpreted "power option agreement" to mean "essentially a contract to buy power at a certain price. It's like a wholesale purchase. I'm going to buy X number of units at X price." Ex. 5 at 83:5-10. Dr. McClellan further testified that his understanding of the "plain and ordinary meaning" of the term is "opting to purchase power ahead of time at a certain rate and then I'm going to pay for that power, and then when it comes for that time I'm going to pay for that power whether I use it or not." Ex. 5 at 157:1-18. He then gave the example of "I'm going to pay for that power, that's the option. When it comes time, I'm going to pay for that whether I use it or not. I don't have to use it. I can screw in that light bulb and turn off the switch, and I'm still paying for that minimum power." Ex. 5 at 157:1-18. Thus, Plaintiffs and their expert misinterpret "power option agreement" as an agreement that gives the purchaser (i.e., the load) the option to use power rather than an agreement that requires the load to use a certain amount of power and gives a power entity the option to reduce the amount of power used by the load.

Based on the clear guidance the specification of the '433 patent provides to a person of

ordinary skill in the art regarding the meaning of "power option agreement," the Court should resolve the parties' dispute and construe this term using Defendants' proposed construction.

b. Proper Claim Construction of "Minimum Power Threshold"

Claim Term	Defendants' Construction	Plaintiffs' Construction
"minimum power threshold" ('433 patent, claims 1, 17, & 20)	a minimum amount of power a load must use during an associated time interval	Plain and ordinary meaning

As with "power option agreement," Plaintiffs purport to apply the "plain and ordinary" meaning of the term "minimum power threshold" but ignore the guidance the specification provides for the meaning of this term. Based on the meaning established by the intrinsic evidence, the Court should construe "minimum power threshold" to mean "a minimum amount of power a load must use during an associated time interval."

The claim construction analysis "must begin and remain centered on the language of the claims themselves, for it is that language the patentee chose to use to 'particularly point[] out and distinctly claim[] the subject matter which the patentee regards as his invention.'" *Interactive Gift Express, Inc. v. Compuserve, Inc.*, 256 F.3d 1323, 1331 (Fed. Cir. 2001) (quoting 35 U.S.C. § 112). Here, the claim language itself supports Defendants' proposed construction. Exemplary claim 1 is instructive:

> 1. A system comprising:
> a set of computing systems, wherein the set of computing systems is configured to perform computational operations using power from a power grid;
> a control system configured to:
> monitor a set of conditions;
> receive power option data based, at least in part, on a power option agreement, wherein the power option data specify: (i) a set of **minimum power thresholds**, and (ii) a set of time intervals, wherein each **minimum power threshold** in the set of **minimum power thresholds** is associated with a time interval in the set of time intervals;

> responsive to receiving the power option data, determine a performance strategy for the set of computing systems based on a combination of at least a portion of the power option data and at least one condition in the set of conditions, wherein the performance strategy comprises a power consumption target for the set of computing systems for each time interval in the set of time intervals, wherein each power consumption target is equal to or greater than the **minimum power threshold** associated with each time interval; and
> provide instructions to the set of computing systems to perform one or more computational operations based on the performance strategy.

Ex. 17 at 59:2-28. Thus, consistent with Defendants' proposed construction, the claim language generally sets forth a system where a load—pursuant to a power option agreement and data received under that agreement—determines a performance strategy for a set of computing systems in order to ensure that they use at least a minimum amount of power during specified time intervals (i.e., minimum power thresholds).

The specification, which "is always highly relevant to the claim construction analysis" and "is the single best guide to the meaning of a disputed term," also supports Defendants' construction. *Phillips*, 415 F.3d at 1315. For example, the specification explains that in order to provide a power entity with the option contemplated by a power option agreement—i.e., "the right, but not obligation, to reduce the amount of power delivered (e.g., grid power) to the load"—"the load needs to be using at least the amount of power subject to the option (e.g., a minimum power threshold)." Ex. 17 at 43:50-60. The '433 patent further explains that:

> "To illustrate an example, a power option agreement may specify that a load (e.g., the datacenters 1102-1106) is required to use at least 10 MW or more at all times during the next 12 hours. Thus, the **minimum power threshold** according to the power option agreement is 10 MW and this minimum threshold extends across the time interval for the next 12 hours. In order to comply with the agreement, the load must subsequently operate using 10 MW or more power at all times during the next 12 hours." Ex. 17 at 44:17-25; *see also id.* at 44:26-35.

The '433 patent also provides an example in Figure 12, which depicts a graph line 1206 indicating "the set of time intervals associated with minimum power thresholds" where "time 1202

increases along the X-axis and minimum power thresholds 1204 increase along the Y-axis of the graph 1200." Ex. 17 at 50:56-59; 50:66-51:5; *see also* 50:53-56; 51:8-52:11.

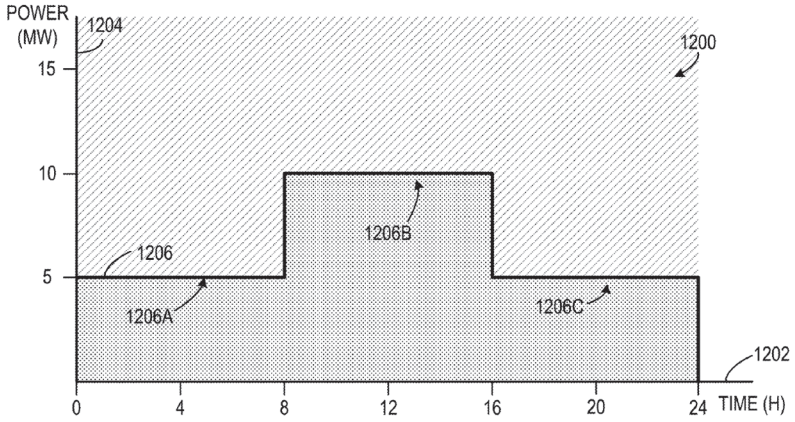


FIGURE 12

In relation to Figure 12, the '433 patent further explains that:

> "To further illustrate, an initial minimum power threshold 1206A is shown associated with the time interval starting at hour 0 and extending to hour 8. In particular, the minimum power threshold 1206A is set at 5 MW during this time interval. Thus based on the power option data shown in FIG. 12, the loads must be able to operate at a target power consumption level that is equal to or greater than the 5 MW minimum power threshold 1206A at all times during the time interval extending from hour 0 to hour 8, in order to be able to satisfy the power option if it is exercised for that time interval. Similarly, the power entity could reduce the power consumed by loads by any amount up to 5 MW at any point during the time interval from hour 0 to hour 8 in accordance with the power option agreement. For instance, the power entity could exercise its option at any point during this time interval to reduce the power consumed by the loads by 3 MW as a way to load balance the power grid."

Ex. 17 at 51:24-40; *see also id.* at 51:8-23; 51:41-52:11.

Plaintiffs and their expert, Dr. McClellan purport to apply the "plain and ordinary meaning of "minimum power threshold," but Dr. McClellan made clear at his deposition that his interpretation of "minimum power threshold" is not based on how the term is used in the '433 patent. Ex. 3 at ¶ 49. In particular, Dr. McClellan testified that:

> Q. What specifically is a minimum power threshold?
>
> A. That's the amount of power that you're contracted to consume.

> Q. And by consume you don't mean use, correct?
>
> A. ***I may not use it***, but I'm going to consume it. I'm purchasing it. ***Whether I use it or whether I sell it, that's a completely separate issue***. I'm agreeing to purchase it at that threshold.

Ex. 5 at 82:18-85:1. As a further example of his interpretation of the term, Dr. McClellan also testified that "[w]ell, if I purchase one kilowatt at $1, I'm going to pay that $1 whether I use that kilowatt or not," thus "[t]he power threshold is the kilowatt." Ex. 5 at 87:16-88:17. Dr. McClellan, however, also testified that he was not sure whether or not there was actually a requirement to use the amount of power set by a minimum power threshold. Rather than being a requirement established by the '433 patent, however, he testified that "[f]undamentally it's a business question." Ex. 5 at 90:14-91:21; *see also id.* at 87:2-15. Dr. McClellan also asserted that "this is a question for McCamant"—another of Plaintiffs' experts, Mr. Frank McCamant. Ex. 5 at 91:22-92:24; *see also id.*at 155:13-156:11. But Mr. McCamant did not offer any opinions regarding claim construction or the meaning of "minimum power threshold." *See generally* Ex. 1; Ex. 2 (McCamant Reply Report). As such, Plaintiffs' and their experts' interpretation of this claim term is somewhat unclear, but nonetheless is not based on the intrinsic record.

It is thus apparent that Plaintiffs at the very least to take an ambiguous position on whether a "minimum power threshold" sets an amount of power a load must actually use. Accordingly, and based on the meaning established by the intrinsic evidence, the Court should resolve the parties' dispute and construe "minimum power threshold" to mean "a minimum amount of power a load must use during an associated time interval."

c. None of the documents Storms sent to Lancium disclose the claimed inventions of the '433 patent.

To prevail on their claim that Storms is the sole true inventor of the '433 patent, Plaintiffs

must prove by clear and convincing evidence that Storms "is the sole inventor of each of the claims of the patent" and that "any contribution by defendant[s] to the conception of each and every claim was insignificant." *See, e.g., Imprenta Servs., Inc. v. Karll*, No. 220CV06177GWPVCX, 2021 WL 4555333, at *6 (C.D. Cal. July 13, 2021). Moreover, it is axiomatic that because Plaintiffs seek to have Storms substituted as the sole inventor of a patent filed by Defendants, they must also prove—again by clear and convincing evidence—that they communicated the inventions of the '433 patent to Defendants. *See Weaver v. Houchin*, 467 Fed. App'x 878, 880 (Fed. Cir. 2012); *Wagner v. Ashline*, No. 2021-1715, 2021 WL 5353889, at *4 (Fed. Cir. Nov. 17, 2021).

As a matter of law, however, Plaintiffs cannot meet this "heavy burden" because there is no evidence that Storms conceived of the properly construed inventions of the '433 patent, much less that he communicated these inventions to Defendants.[10]

The only written communications between Storms and any of Defendants were a handful of text messages exchanged from May 3-9, 2019 and a single email that Storms sent to McNamara on May 9, 2019. SOF ¶14; Ex. 20; *see also* D.I. 103 at ¶¶ 34-36. Plaintiffs cannot establish that any of these written communications demonstrate, by clear and convincing evidence, possession of the inventions of the '433 patent by Storms or conveyance of the claimed inventions to Defendants. For example, because Plaintiffs rely on a misinterpretation of "power option agreement" and "minimum power threshold" they cannot establish that Storms' communications show possession or communication of a system that can:

- "receive power option data based, at least in part, on a power option agreement, wherein the power option data specify: (i) a set of minimum power thresholds, and (ii) a set of time intervals, wherein each minimum power threshold in the set of

[10] Likewise, Plaintiffs cannot prove that McNamara and Cline—the '433 patent's named inventors—did not provide a significant contribution to conception of any claim. Indeed, Plaintiffs' expert, Dr. McClellan does not offer any opinions or analysis that McNamara and Cline did not provide a significant contribution to any of the claims. *See, e.g.*, Ex. 3 at ¶ 14 (summary of opinions).

minimum power thresholds is associated with a time interval in the set of time intervals"; or

- "responsive to receiving the power option data, determine a performance strategy for the set of computing systems based on a combination of at least a portion of the power option data and at least one condition in the set of conditions, wherein the performance strategy comprises a power consumption target for the set of computing systems for each time interval in the set of time intervals, wherein each power consumption target is equal to or greater than the minimum power threshold associated with each time interval"

as required by independent claim 1 of the '433 patent—or the similar requirements of the other two independent claims (claims 17 and 20). Indeed, Plaintiffs' expert, Dr. McClellan provides no explanation how of the written communications and documents Storms sent to McNamara disclose or convey the properly construed requirements of the claims. *See generally* Ex. 3 (McClellan Opening Report); Ex. 4 (McClellan Reply Report).

Fundamentally, the alleged "invention" that Storms purportedly conceived of and communicated to Defendants does not pertain to the claimed inventions of the '433 patent. Rather, as Dr. McClellan asserts, it pertains to "a system that utilizes a set of Bitcoin miners under the direction of a control system" that based on certain information "periodically determinine[s] mining profitability" and then "may either instruct some or all of the miners to mine Bitcoin or sell power to the grid (power arbitrage)." Ex. 3 at ¶ 9. Dr. McClellan thus relies on his misinterpretation of "power option agreement" and "minimum power threshold" to mistakenly conclude that Storms' written communications with McNamara demonstrate the above claim requirements because these communications show a system that "calculated profitability at distinct time intervals, each with an associated power threshold, such as comparing mining profitability based on, inter alia, current power usage and energy price conditions on the one hand with profitability based, inter alia, on expected future power usage and energy price conditions" and then "determin[es] performance strategies … to determine, for example, whether to mine Bitcoin"

based on whether that is the most profitable use of purchased power. Ex. 3 at ¶¶ 188-189; *see also id.* at ¶¶ 62, 66. But the claim elements—and indeed the claimed inventions—have no requirements relating to profitability calculations.

Furthermore, the claims set forth requirements that a load (e.g., a Bitcoin mining operation) must use the amount of power set by the minimum power thresholds regardless of profitability, which is the opposite of the system contemplated by Storms' communications. Indeed, when asked whether the system described in Storms' communications "contemplate[s] a performance strategy where X amount of power must be utilized by the miners, they must mine and use X amount of power, regardless of whether or not it's profitable for the miners to do so?", Dr. McClellan testified that "[t]he simulation kind of ignores" what he called a "nonsensical case … because it's focusing on ways to make positive dollars … ." Ex. 5 at 238:7-23.

Thus, for the reasons above, Plaintiffs cannot establish that any written communications between Storms and Defendants demonstrate conception of the inventions of the '433 patent by Storms or communication of the inventions to Defendants.

d. There is no corroboration that Storms verbally communicated the claimed inventions to Defendants.

Plaintiffs also cannot prove by clear and convincing evidence that Storms orally communicated the inventions of the '433 patent, as properly construed, to Defendants, including McNamara, because they have no evidence to corroborate any such assertion. *See Ethicon*, 135 F.3d at 1461.

As an initial matter, even Plaintiffs' expert, Dr. McClellan testified that "I think it's unlikely that an enormous amount of pertinent information was communicated at the dinner" where Storms and McNamara spoke in person because for "dinners like that there's not normally an enormous amount of information that's passed back and forth." Ex. 5 at 186:24-187:20.

Moreover, as set forth above, because none of the written communications that Storms had with Defendants disclose the claimed inventions of the '433 patent, these communications cannot corroborate that Storms communicated the inventions of the '433 patent to Defendants.

Wagner v. Ashline is instructive on this point. No. 2021-1715, 2021 WL 5353889 (Fed. Cir. Nov. 17, 2021). In *Wagner*, the Federal Circuit affirmed summary judgment of no inventorship by a purported inventor, concluding that purported corroborating evidence of a discussion between the purported inventor and the named inventor "corroborate[d] only the undisputed fact that [the named inventor] and [the purported inventor] met and that they discussed" other topics, but "[i]t does not corroborate [the purported inventor]'s testimony in support of her claim of joint inventorship." 2021 WL 5353889, at *5. In other words, the Federal Circuit concluded that in order for an unnamed inventor's testimony to meet the clear and convincing evidence of proving an inventorship claim, there must be evidence that corroborates what was actually communicated between the purported inventor and the named inventor(s).

Here, as a matter of law, Plaintiffs cannot prove by clear and convincing evidence that Storms orally communicated the claimed inventions of the '433 patent to Defendants because they have no corroborating evidence of what was actually communicated. Plaintiffs have not deposed or offered testimony from any other attendees of the dinner where Storms and McNamara spoke, and McNamara certainly does not corroborate Storms' claim. In addition, as set forth above, none of the written communications between Storms and McNamara corroborate that Storms possessed or communicated the inventions of the '433 patent as properly construed.

In addition, evidence in the case demonstrates that Storms did not conceive of the inventions of the '433 patent, much less communicate these inventions to Defendants. Indeed, two days after meeting McNamara, Storms texted another person he was working with, Ben Hakes,

and admitted "[t]he guys at Lancium ***are <u>doing</u>*** what ***we are <u>trying</u> to do*** exactly … . *See* Ex. 16 at BB10004001.

Thus, for the reasons above, Storms' oral communications with Defendants do not establish conception or communication of the claimed inventions of the '433 patent, because as a matter of law, Storms has no clear and convincing evidence corroborating any such communication. Likewise, Plaintiffs cannot establish that the written communications between Storms and Defendants establish conception or communication of the claimed inventions. Accordingly, summary judgment should be granted on Plaintiffs' Count I that Storms is not the sole inventor of the '433 patent.

B. Plaintiffs' Joint Inventorship Claim Fails As A Matter Of Law Because Plaintiffs Cannot Meet Their Burden Of Proving Collaboration.

1. Applicable Legal Principles

The law regarding claims for correction of inventorship under 35 U.S.C. § 256 is generally the same whether the claim is for complete substitution of inventors or addition of unnamed joint inventors. However, for joint inventorship claims, the alleged contribution of the purported co-inventor is compared with the subject matter of the properly construed claims to determine whether the alleged inventor contributed in some "significant manner" to the conception of the claimed invention. *Gemstar*, 383 F.3d at 1381. To meet this standard, the would-be co-inventor must demonstrate that she/he made a contribution that "is not insignificant in quality, when that contribution is measured against the dimension of the full invention," as opposed to merely explaining well-known concepts and/or the state of the art to the real inventors. *Acromed Corp. v. Sofamor Danek Group, Inc.*, 253 F.3d 1371, 1379 (Fed. Cir. 2001) (reversing a jury verdict of invalidity for improper inventorship due to insufficiency of evidence).

A would-be co-inventor must also demonstrate some element of joint behavior, such as

collaboration or working under common direction. *See, e.g.*, *Kimberly-Clark Corp. v. Procter & Gamble Distributing Co., Inc.*, 973 F.3d 911, 917 (Fed. Cir. 1992). Stated differently, "a joint invention is 'a product of a collaboration between two or more persons working together to solve the problem addressed.'" *Rubin v. Gen. Hosp. Corp.*, No. 09-10040-DJC, 2011 WL 1625024, at *6 (D. Mass. Apr. 28, 2011) (quoting *Kimberly-Clark*, 973 F.2d at 917).

2. Plaintiffs Cannot Prove By Clear And Convincing Evidence That Storms Collaborated With Messrs. McNamara and Cline On The Claimed Inventions

Plaintiffs' joint inventorship claim fails because the claim is not supported by clear and convincing evidence that there was "joint behavior" or "collaboration" between putative inventor Storms and named inventors McNamara and Cline as to the '433 patent's claimed inventions. The only communications—and thus potential collaboration—between Storms and any of Defendants were: (1) a conversation during a group dinner on May 3, 2019; (2) a series of text messages following the dinner sent from May 3 to May 9, 2019; and (3) an email that Storms sent McNamara on May 9, 2019. *See* SOF ¶14; D.I. 103 at ¶¶ 32-36; D.I. 41 at ¶¶ 38, 40-41, 43, 46-50; D.I. 28 at ¶¶ 38, 40-41, 43, 46-50, Exs. C-D. But these communications, as a matter of law, cannot establish the required collaboration.

University of Utah v. Max-Planck-Gesellschaft Zur Foerderung Der Wissenschaften E.V., is instructive. 851 F.3d 1317 (Fed. Cir. 2017). In *University of Utah*, the putative inventor, Dr. Bass, wrote a "mini-review" of research of others relating to RNA interference ("RNAi") and included her "own hypotheses about enzymatic processes that may be responsible for the RNAi activity reported in" prior work by another, Dr. Tuschl. *Id.* at 1320. "It [was] undisputed that Dr. Tuschl read Dr. Bass' mini-review, recognized her hypothesis … and tested that hypothesis." *Id.* In addition, "Dr. Bass and Dr. Tuschl met for dinner during a conference and discussed Dr. Tuschl's research in relation to Dr. Bass' hypothesis." *Id.* at 1321. And based on Dr. Tuschl's test

results that confirmed Dr. Bass' hypothesis, Dr. Tuschl and his colleagues filed and received a patent on their discovery. *Id.* at 1320. Based on these facts, the plaintiff filed suit seeking to add Dr. Bass as a joint inventor on the patent-at-issue, but the district court granted summary judgment against this claim reasoning that "there was no evidence to support a finding of collaboration between Dr. Bass and the [named] inventors." *Id.* at 1321. This was because the court found that Dr. Bass' mini-review paper "was already in the public domain by the time the [named] inventors relied on it" so it "could not, on its own, support a finding of collaboration," and the single discussion between Dr. Bass and Dr. Tuschl "at an academic conference could not constitute the collaboration needed to establish joint inventorship." *Id.* The Federal Circuit also did not dispute the district court's reasoning. *Id.*

The basis of Plaintiffs' joint inventorship claim here is analogous to *University of Utah* and also warrants summary judgment based on the lack of collaboration. As an initial matter, just as the dinner conversation in *University of Utah* did not demonstrate collaboration, neither does Storms and McNamara's dinner conversation here. Indeed, although the dinner conversation in *University of Utah* occurred while the named inventors' work on the patent-at-issue was ongoing, the dinner conversation between Storms and McNamara was the ***first*** communication they had. Moreover, Plaintiffs admit that Storms' conversation with McNamara occurred in front of other of the approximately eight attendees at the May 3, 2019 dinner, which included competitors in the Bitcoin mining field. SOF ¶11; D.I. 41 at ¶¶ 38, 40-41, 43; D.I. 28 at ¶¶ 38, 40-41, 43. Thus, this dinner provides even less support for collaboration than the dinner in *University of Utah*.

Turning to the handful of text messages between Storms and McNamara, these messages plainly do not disclose any elements of the '433 patent claims, and thus do not show collaboration on the inventions of the '433 patent. *See* D.I. 41 at ¶¶ 46-48; D.I. 28 at ¶¶ 46-48, Ex. C. Moreover,

Plaintiffs do not contend otherwise. Indeed, Plaintiffs' expert Dr. McClellan does not point to any of these text messages in support of his opinions that Storms is an unnamed inventor of the '433 patent. *See generally* Ex. 3 at Sections VII-VIII.

In addition, the email that Storms sent to McNamara cannot establish collaboration for several reasons. First, one of the five attachments to the email included a drawing titled "BearBox Automatic Miner Management System Version 1.0" that Storms also posted on BearBox's Twitter account on June 24, 2019—more than three months before the provisional application leading to the '433 patent was filed on October 28, 2019. SOF ¶¶1, 3, 19-20; *Compare* Ex. 10 at BB00000092, *with* Ex. 11 at BB00000718. Storms testified that this Twitter account, which had its first tweet on November 1, 2018, was "public for maybe two years or so." *See* Ex. 7 at 247:8-248:21; Ex. 11 at BB00000718. Thus, this drawing was publicly available before the filing of the '433 patent. *See* SOF ¶¶19-20. Plaintiffs, including through their expert Dr. McClellan, assert that this publicly available drawing discloses numerous claim elements of the '433 patent. *See, e.g.*, Ex. 3 at ¶¶ 185, 186, 188, 190, 192, 196, 200, 230, 237, 241, 244, 248, 250, 262. But just as in *University of Utah*, this publicly available document cannot support a finding of collaboration. *University of Utah*, 851 F.3d at 1321.

Second, Storms admitted that three of the other five email attachments were publicly available product specification sheets. Ex. 7 at 213:5-214:5; Ex. 10; *see also* SOF ¶18. Thus, these documents also cannot support a finding of collaboration because they only disclose information about the state of the art in the field.[11] *See Acromed*, 253 F.3d at 1379; *University of Utah*, 851 F.3d at 1321.

[11] Plaintiffs also cannot establish that these documents disclose a significant contribution to the claimed inventions.

Third, although Storms testified that the only allegedly confidential information in the email was in the fifth attachment, an Excel spreadsheet, this document also cannot support a finding of collaboration. As an initial matter, this document contains much of the same information as the publicly available drawing, and Dr. McClellan cites the documents as both disclosing many of the same claim elements. *See, e.g.*, Ex. 3 at ¶¶ 190, 196, 200, 230, 237, 241, 244, 248, 250. Moreover, Plaintiffs' only basis for asserting that the Excel file is confidential is a boilerplate "confidentiality notice" at the bottom of Storms' cover email—the Excel file itself contains no confidentiality marking—stating that "[t]his email communication ***may*** contain private, confidential, or legally privileged information intended for the sole use of the designated and/or duly authorized recipient(s)." SOF ¶16; Ex. 10 at BB00000090. Storms did not have a confidentiality or nondisclosure agreement with McNamara or any of Defendants. And Plaintiffs admit that "Storms last communicated with McNamara on May 9, 2019 via e-mail, and after sending that message, Storms did not hear from McNamara again." SOF ¶13; D.I. 103 at ¶ 36. Thus, Storms did not, and could not, have asked McNamara to treat the Excel file as confidential after emailing it to him.

Storms also sent the information he claims to be confidential to others. Specifically, Storms emailed similar spreadsheets to an individual named Todd Garland. Ex. 7 at 186:17-189:12, 214:6-12 Ex. 9. These spreadsheets include the same column headers and categories of information as the spreadsheet sent to Mr. McNamara only from different times. *Compare* Ex. 9 at BB10000912, *with* Ex. 10 at BB00000097. Storms admitted that he did not have a nondisclosure agreement with Garland or Garland's company, and Garland did not give his word to keep it confidential. Ex. 7 at 71:18-23; 188:1-189:2. Moreover, as with his email to McNamara, Plaintiffs' only basis for asserting that this email was confidential is the boilerplate confidentiality notice that Storms

included on all of his emails. Ex. 7 at 72:4-9; 188:18-21.

But courts have found that "[a] boilerplate confidentiality statement" in an email "does not constitute a reasonable measure to keep secrecy—especially when [it] use[s] the phrase 'may contain information that is … confidential.'" *Acad. of Allergy & Asthma in Primary Care v. Quest Diagnostics, Inc*, No. 5:17-CV-1295-RCL, 2022 WL 980791, at *10 (W.D. Tex. Mar. 31, 2022) (dismissing trade secret claim); *Sortiumusa LLC v. Hunger*, No. 3:11-cv-1656, 2013 WL 11730655, at *11-12 (N.D. Tex. Mar. 31, 2013) (dismissing trade secret claims and finding that a "confidentiality statement" at the bottom of an email stating it "*may* contain information that is confidential or otherwise protected from disclosure … bears no relevance, as a matter of law, as to whether [plaintiff] took appropriate steps to safeguard its alleged trade secrets" (emphasis in original)). And under federal patent law, an idea is considered publicly available if "given to a member of the public without restriction." *See Pronova Biopharma Norge AS v. Teva Pharms. USA, Inc*., 549 F. App'x 934, 940 (Fed. Cir. 2013). Thus, Storms' Excel file was also publicly disclosed and cannot support a finding of collaboration.

Rubin v. General Hosp. Corp., is also instructive. 523 Fed. Appx. 719 (Fed. Cir. 2013). In *Rubin*, a group of researchers (the Rubin group), authored a paper identifying two specific gene mutations that caused the disease Familial Dysautonomia (FD), and contrary to their request the abstract of this paper was sent to another group of researchers (the Gusella group), who were also working on identifying the cause of FD. *Id.* at 721. When the Gusella group filed a patent claiming a diagnostic method for FD using these gene mutations, the Rubin group sought to be added as joint inventors. *Id.* at 722. The Federal Circuit, however, affirmed summary judgment of no joint inventorship, concluding that "the nature of this communication of information, do[es] not support joint invention." *Id.* at 723. Just as in *Rubin*, Storms' transmission of documents to McNamara,

with no further discussion or communication, cannot support a finding of collaboration or support a claim of joint inventorship.

Thus, summary judgment should be granted in Defendants' favor on Plaintiffs' joint inventorship claims (Count II).

3. Plaintiffs Cannot Prove By Clear And Convincing Evidence That Storms Made A Significant Contribution To The '433 Patent.

To be named as a joint inventor of a patent, one must "contribute in some significant manner to the conception of the invention." *Gemstar*, 383 F.3d at 1381. And "[t]he general rule is that a party alleging misjoinder or non-joinder of inventors must meet the heavy burden of proving its case by clear and convincing evidence." *Eli Lilly*, 376 F.3d at 1358. Here, as set forth above in Section IV.A.2, Plaintiffs premise their inventorship claims on misinterpretations and misconstructions of two key claim terms of the '433 patent. Indeed, Plaintiffs' experts offer no analysis or opinions supporting any significant contribution by Storms to the claims of the '433 patent as properly construed. Thus, Plaintiffs have not met and cannot meet their "heavy burden" of proving a significant contribution to the claims of the '433 patent. Accordingly, summary judgment should be granted to Defendants on Plaintiffs' joint inventorship claim (Count II).

C. Plaintiffs' Conversion Claim Is Prescribed By The One Year Statute Of Limitations.

Plaintiffs' conversion claim (Count V) is premised on Defendants' alleged conversion of a power arbitrage method disclosed in the documents that Storms emailed to McNamara. But Plaintiffs' own allegations in this case demonstrate that they knew or should have known of Defendants' alleged use of their purported power arbitrage method more than one year before bringing this claim. Therefore, summary judgment should be granted for Defendants on Plaintiffs' conversion claim because this claim is prescribed by Louisiana's applicable one-year statute of limitations.

It is well-established that under Louisiana law, "[a] conversion action sounds in tort and is subject to a one-year liberative prescriptive period" under Louisiana Civil Code Article 3492.[12] *Bihm v. Deca Systems, Inc.*, 226 So.3d 466, 480 (La. 2017); *see also Jefferson v. Crowell*, 956 So.2d 746, 749 (La. App. 2d Cir. 2007). In addition, "[a] prescriptive period will begin to run even if the injured party does not have actual knowledge of facts that would entitle him to bring a suit as long as there is constructive knowledge of same. Prescription commences upon whatever notice is enough to excite attention and put the party on guard or call for inquiry." *Bihm*, 226 So.2d at 480 (internal citations omitted). In other words, "[t]he prescriptive period commences on the date the aggrieved party has actual or constructive knowledge of the facts that would entitle him to bring suit." *Jefferson*, 956 So.2d at 749.

Here, Plaintiffs' conversion claim is based on Defendants' alleged use of Plaintiffs' so-called "power arbitrage" method, which Dr. McClellan explains is "a system that utilizes a set of Bitcoin miners under the direction of a control system" that will "periodically determine mining profitability" and "may either instruct some or all of the miners to mine Bitcoin or sell power back to the grid (power arbitrage)."[13] Ex. 3 at ¶ 9. This conversion claim was also first pled in Plaintiffs' Second Amended Complaint, which was filed on February 16, 2022[14] after the Court dismissed

[12] The Court has previously found that Louisiana law applies to Plaintiffs' conversion claim and that "both sides agree" on this point. *See* D.I. 143.

[13] Dr. McClellan's opening report explicitly states that "[i]n my opinion, Lancium is using BearBox's power arbitrage trade secrets," and his reply report—issued after the Court struck Plaintiffs' trade secret misappropriation claims—clarifies that "[m]y opinions, in this report and my opening report, are not dependent on whether the cause of action in this lawsuit is trade secret misappropriation, which I understand is no longer at issue in this case, or conversion." *See* Ex. 3 at ¶ 302; Ex. 4 at ¶ 215

[14] *See* D.I. 103-3 at 20-22 (providing a comparison of Plaintiffs' newly pled conversion claim against the previously pled conversion claim).

Plaintiffs' original conversion claim as preempted by federal patent law.[15] Plaintiffs further admit in the Second Amended Complaint that they "became aware of Defendants' wrongful use of BearBox's technology on or about August 17, 2020, when they learned about the Layer1 Lawsuit" (i.e., *Lancium LLC v. Layer1 Technologies, Inc.*, Case No. 6:20-cv-739 (W.D. Texas) "through a press release dated August 14, 2020." D.I. 103 at ¶ 54; *see also id.* ¶ 52. And the publicly available complaint in the Layer1 Lawsuit explains that Lancium's technology allows "computationally intensive activities requiring significant amounts of electricity such as Bitcoin mining" to "ceas[e] (or reduc[e]) Bitcoin mining operations" during "times of high-priced electricity" and thereby "receive[] the difference in value of the real time electricity versus the data center's pre-existing power purchase agreement price." *See* Ex. 19 (Layer1 Lawsuit complaint) at ¶ 10; *see also* ¶¶ 8-9, 11. In other words, the complaint in the Layer1 Lawsuit explains that Lancium's technology can do what Plaintiffs now allege is their purported power arbitrage method, by ceasing Bitcoin mining operations and selling the power that would otherwise be used to mine Bitcoin, when doing so is more profitable.

Thus, through their knowledge of the Layer1 Lawsuit and their knowledge of the information Storms provided to McNamara, by August 17, 2020 Plaintiffs had actual knowledge, or at the very least constructive knowledge, of facts that would have enabled them to bring the present claim. And because Plaintiffs had this knowledge well over a year before they pled their conversion claim on February 16, 2022, this claim is prescribed by the statute of limitations.

Moreover, Plaintiffs' currently pled conversion claim does not "relate back" to the filing of the original complaint in this case because it does not "arise[] out of the conduct, transaction, or occurrence set forth or attempted to be set forth in the original pleading." *See Hammons v. City*

[15] *See* D.I. 92 at 12 (recommending dismissal); D.I. 97 (adopting recommendation of D.I. 92).

of Tallulah, 708 So.2d 502, 504 (La.App. 2d Cir. 1998) (finding conversion claim did not relate back to original complaint). As pled, Plaintiffs' current conversion claim is based upon Defendants' allegedly using "Bearbox's technology" to "modify their Smart Response™ software." D.I. 103 at ¶ 87. This is entirely different than the claim pled in their original Complaint, which did not assert any claims based on Lancium's Smart Response™ software or the alleged use of Plaintiffs' power arbitrage method. Rather, all of the claims of the original Complaint (and the First Amended Complaint) were based on Lancium's alleged patenting of Plaintiffs' invention. *See generally* D.I. 1; D.I. 19. Indeed, at the hearing on Defendants' motion to strike the trade secret claims in the Second Amended Complaint, Magistrate Judge Burke explained that:

> "Like a key issue here is defendants say that plaintiffs were basically talking about the types of arbitrage methods that are referred to in the second amended complaint back in the original complaint. And the plaintiff is saying, No, we weren't. No, no, we were talking about something else. … But I'm still struggling to understand what it was you were talking about in the first complaint."

In response to this, Plaintiffs' counsel made clear that "[f]irst of all, it had nothing to do with energy value arbitrage methods" Ex. 22 at 22:16-23:21. And when the Court followed up, Plaintiffs' counsel confirmed "it didn't have anything to do with arbitrage methods at all." Ex. 22 at 24:1-3. As such, Plaintiffs' conversion claim does not arise out of the same conduct pled in the original Complaint, and thus does not "relate back" to the original Complaint.

Accordingly, summary judgment should be granted that Plaintiffs' conversion claim (Count V) is prescribed by the applicable one-year statute of limitations.

D. Plaintiffs' Conversion Claim Is Preempted By Federal Patent Law

Plaintiffs' conversion claim is based upon Defendants' use of information in documents that, as a matter of law, was not confidential. But because Plaintiffs' claim seeks to restrict the use of non-confidential information, it conflicts with federal patent law. Accordingly, the Court should grant summary judgment that Plaintiffs' conversion claim is preempted by federal patent law.

It is well-established that "[f]ederal law preempts state law that offers patent-like protection to discoveries unprotected under federal patent law." *Ultra-Precision Mfg., Ltd v. Ford Motor Co.*, 411 F.3d 1369, 1377-78 (Fed. Cir. 2005) (noting that "Federal Circuit law governs whether federal patent law preempts a state law claim") (internal quotations and citation omitted). The Supreme Court has also explained that "[a] state law that substantially interferes with the enjoyment of an unpatented utilitarian or design conception which has been freely disclosed by its author to the public at large impermissibly contravenes the ultimate goal of public disclosure and use which is the centerpiece of federal patent policy." *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 156-57 (1989). Thus, "[a]bsent secrecy, state law cannot create a collateral set of rights available as an adjunct or expansion to patent rights." *Ultra- Precision*, 411 F.3d at 1379 (quoting *Waner v. Ford Motor Co.*, 331 F.3d 851, 856 (Fed. Cir. 2003)). Moreover, under federal patent law, an idea is considered publicly available if "given to a member of the public without restriction." *See Pronova Biopharma Norge AS v. Teva Pharms. USA, Inc*., 549 F. App'x 934, 940 (Fed. Cir. 2013); *see also Bonito Boats*, 489 U.S. at 149 (under 35 U.S.C. § 102, "[o]nce an inventor has decided to lift the veil of secrecy from his work, he must choose the protection of a federal patent or the dedication of his idea to the public at large").

Plaintiffs' Second Amended Complaint alleges that Defendants are liable for conversion because:

> "[w]ithout Plaintiffs' consent, Defendants intentionally and willfully assumed dominion and control over BearBox's technology, including system designs, documents, data, and know-how, and improperly used it to modify their Smart Response™ software, and corresponding system designs, to function as reflected in BearBox's system designs, documents, data, and know-how … ."

D.I. 103 at ¶ 87. Under Louisiana law, however, a claim for conversion applies only to "goods" or "chattel." *See Quealy v. Paine, Webber, Jackson & Curtis, Inc.*, 475 So.2d 756, 760 (La. 1985);

Dual Drilling Co. v. Mills Equip. Invs., Inc., 721 So. 2d 853, 857 (La. 1998); *Dorsey v. Money Mack Music, Inc.*, 304 F. Supp. 2d 858, 866 (E.D. La. 2003) ("[T]he torts of conversion and trespass relate to interference with tangible rather than intangible property."); *Brand Coupon Network, LLC v. Catalina Mktg. Corp.*, No. 11-00556, 2014 WL 6674034, at *6 (M.D. La. Nov. 24, 2014) ("[C]onversion requires unlawful interference with *chattel*.") (emphasis in original). And chattel "is deemed 'corporeal movable' property." *BASF Agrochemical Prods. v. Unkel*, No. 05-1478, 2006 WL 3533133, at *7 (W.D. La. Dec. 7, 2006). Thus, Plaintiffs' conversion claim is premised on the "conversion" of information contained in electronic files that Storms emailed to McNamara in a single email sent on May 9, 2019.[16] Ex. 7 at 113:24-114:6; 212:7-10; *see also* D.I. 103 at ¶ 36.

As set forth above in Section IV.B.2, although the email that Storms sent to McNamara had several attachments, Plaintiffs only contend that one of the attachments, an Excel file, contained confidential information. SOF ¶17. And as also set forth above in Section IV.B.2, the only basis for Plaintiffs' assertion that this Excel file is confidential—the "confidentiality notice" at the bottom of the cover email, which states only that "that "[t]his email communication ***may*** contain private, confidential . . . information" (SOF ¶16; Ex. 10 at BB00000090)—does not, as a matter of law, make it confidential. *See, e.g., Acad. of Allergy & Asthma*, 2022 WL 980791, at *10; *Sortiumusa*, 2013 WL 11730655, at *11-12 Thus, Plaintiffs cannot establish that the allegedly converted information was confidential.

The Federal Circuit has also repeatedly found state law claims based on the use of non-

[16] To the extent Plaintiffs' conversion claim is premised on Defendants' alleged conversion of intangible "system designs, … data, and know-how" that are not contained in a physical, tangible property, the Court should grant summary judgment in Defendants' favor because the claim does not satisfy the elements of conversion and fails as a matter of law. *See, e.g., Quealy*, 475 So.2d at 760; *Dorsey* 304 F. Supp. 2d at 866.

confidential information to be preempted. For example, in *Ultra-Precision*, the court held plaintiff's unjust enrichment claim, which was premised upon the defendant's "using, manufacturing, and selling vehicles equipped with [Ultra-Precision's] technology" was preempted because the idea/technology was not kept confidential and was therefore "free for all the world to enjoy." *Id.* at 1380-82. Additionally, in *Waner* the Federal Circuit affirmed dismissal of the plaintiff's unjust enrichment claim premised upon the use of his non-confidential idea because such "ideas can only be protected under intellectual property law by the patent system." *Waner*, 331 F.3d at 856–57.

Therefore, because Plaintiffs' conversion claim is based on the alleged use of information that as a matter of law was not confidential, the Court should grant summary judgment that Plaintiffs' conversion claim (Count V) is preempted by federal patent law.

V. CONCLUSION

For at least the foregoing reasons, Plaintiff's claims for correction of inventorship (Counts I and II) and for conversion (Count V) fail as a matter of law. Accordingly, summary judgment should be granted for Defendants on all three claims.

Dated: June 15, 2022

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IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

BEARBOX LLC and AUSTIN STORMS, Plaintiffs, v. LANCIUM LLC, MICHAEL T. MCNAMARA, and RAYMOND E. CLINE, JR. Defendants.	)	C.A. No. 21-534-MN

CERTIFICATE OF SERVICE

I certify that on June 15, 2022, I caused a sealed copy of **Defendants' Opening Brief in Support of their Motion for Summary Judgment and to Exclude Certain Portions of the Opinions of Plaintiffs' Technical Expert** to be served on the following counsel of record by via FileShare.

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communications Mr. Storms had with Mr. McNamara. D.I. 28 at ¶ 38; D.I. 41 at ¶ 38; D.I. 103 at ¶¶ 35-36.

15. Austin Storms has never had any oral communications with Raymond Cline. Ex. 23 at 10-11.

16. The May 9, 2019 email that Austin Storms sent Michael McNamara includes a "Confidentiality Notice" that states "This email communication may contain private, confidential, or legally privileged information intended for the sole use of the designated and/or duly authorized recipient(s)." D.I. 28 at ¶¶ 48-49, Ex. D; D.I. 41 at ¶¶ 48-49. None of the attachments to this email include any confidentiality marking or designation. D.I. 28 at ¶¶ 48-49, Ex. D; D.I. 41 at ¶¶ 48-49.

17. The documents produced by Plaintiffs with Bates numbers BB00000090-BB00000097, are the May 9, 2019 email and its attachments that Austin Storms sent to Michael McNamara. Ex. 10

18. Plaintiffs Austin Storms and BearBox LLC do not assert that the May 9, 2019 email (BB00000090) or its attachments marked as BB00000091-BB00000096 are confidential. Ex. 7 at 217:13-23.

19. The drawing titled "BearBox Automatic Miner Management System Version 1.0" in the document marked as BB00000092 was posted on the BearBox Twitter account on June 24, 2019. Ex. 10 at BB00000092; Ex. 11 at BB00000718.

20. The BearBox Twitter account was publicly viewable on June 24, 2019. Ex. 7 at 247:8-248:21.

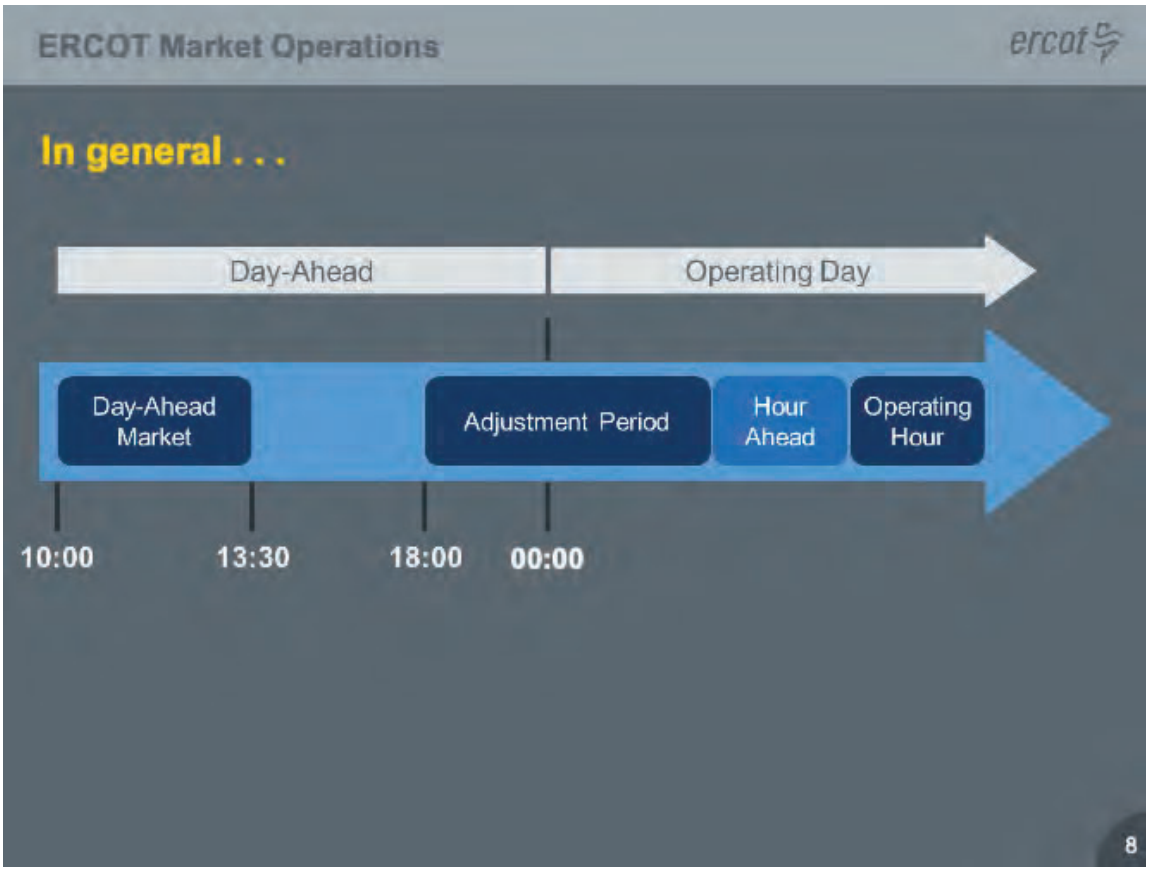
IV. BEARBOX

21. BearBox only built one BearBox container, which it sold for no profit. Ex. 7 at 45:18-23; 48:6-7.

Basic market operations

As shown in Figure 5, ERCOT Market Operations consist of a Day-Ahead Market and an Operating Day or Real Time Market. In the ERCOT market, ERCOT controls the dispatch of Resources via QSEs. The QSE is the only entity that interacts with ERCOT on behalf of Generation Resources and the LSEs for operations and wholesale settlement. These are discussed in more detail in the following sections.

Figure 5 ERCOT Market Operations



Day Ahead Market (DAM)

The Day-Ahead Market (DAM) is a voluntary, financially-binding forward energy market. The DAM matches willing buyers and sellers. It provides a platform to hedge congestion costs in the day-ahead of the Operating Day, and instruments to mitigate the risk of price volatility in Real-Time[9]. Electric transmission networks can become congested when power flows reach the limit on a transmission line. The market resolves and prices such congestion results by incurring costs to alter generation in different locations[10]. Purchases in the DAM at a fixed price point can serve

[9] https://www.ercot.com/mktinfo/dam

[10] 2020 STATE OF THE MARKET REPORT FOR THE ERCOT ELECTRICITY MARKETS, Potomac Economics, Independent Market Monitor for ERCOT, May 2021

[6] Multiple methods were used to analyze the relevant technologies and items of development, including document review and source code review.

[7] My source code review involved analyzing the structure and design of the Bearbox technologies, including identifying architectural and functional elements of the Bearbox product suite which contain technologies, protocols, and architectures or which exhibit functions, behaviors, or structures that may infringe on corresponding aspects of the subject patent(s).

[8] Certain source code has been produced as printouts with Bates labeling. I reserve the right to rely on all such printouts. I understand that certain relevant source code from Defendants has not been produced. I reserve the right to supplement my opinions in the event that additional source code is produced. My analysis yielded a number of observations, including without limitation the following example high-level points. In the following, [n] denotes a claim number of the subject patent, and "*text*" denotes some verbiage copied from the referenced claim language.

[9] I understand that Bearbox and Austin Storms developed a system that utilizes a set of Bitcoin miners under the direction of a control system that uses (1) various API calls to retrieve relevant information (such as real-time and day-ahead energy prices), (2) custom PDU logic and fan control to provide fine grain load control for the miners, and (3) custom logic to process the information and periodically determine mining profitability. Based on conditions, the system may either instruct some or all of the miners to mine Bitcoin or sell power to the grid (power arbitrage).

[10] I understand that Lancium also uses and/or sells Bitcoin mining related and power arbitrage features under a product named Smart Response™. I understand that Lancium's Smart Response™ system acts as a "Controllable Load Resource" data center which alternately mines Bitcoin or sells energy to the grid based on conditions such as energy prices, Bitcoin pricing and hashtag rates, and the like.

[11] I am a salaried employee of Texas State University and I am being compensated in addition to my normal salary for my professional services in this case by either The Barr Group or

patent coverage under the doctrine of equivalents that would be so broad as to include the same features that were disclaimed to distinguish the invention from the prior art during the prosecution of the patent

V. THE ’433 PATENT

[43] United States Patent No. 10,608,433 titled “METHODS AND SYSTEMS FOR ADJUSTING POWER CONSUMPTION BASED ON A FIXED - DURATION POWER OPTION AGREEMENT,” was filed on December 4, 2019 and issued on March 31, 2020.

A.1. Overview of the '433 Patent

[44] In general, the '433 Patent discloses example embodiments which enable a computing system to adjust power consumption based on a power option agreement, and using some combinations of power thresholds, time intervals, and monitored conditions. The '433 Patent provides an overview of this aspect of the disclosure:

> Examples relate to adjusting load power consumption based on a power option agreement. A computing system may receive power option data that is based on a power option agreement and specify minimum power thresholds associated with time intervals . The computing system may determine a performance strategy for a load (e.g., set of computing systems) based on a combination of the power option data and one or more monitored conditions. The performance strategy may specify a power consumption target for the load for each time interval such that each power consumption target is equal to or greater than the minimum power threshold associated with each time interval. The computing system may provide instructions the set of computing systems to perform one or more computational operations based on the performance strategy.

’433 patent, 1:6-25.

A.2. Level of Ordinary Skill in the Art

[45] I also have been asked to evaluate the level of ordinary skill in the art for the purpose of reading and understanding the '433 patent. In order to make this assessment, I considered the level of education and experience of persons of ordinary skill in the art at the time

of the filing of the '433 patent. I understand that the filing date of the '433 patent is December 4, 2019.

[46] In my opinion, at the time of the filing of the '433 patent, one of ordinary skill in the art should have a degree in electrical engineering, computer science, or a similar field and one to two years of experience in the field of software or an equivalent level of experience.

[47] My qualifications and experience exceed those of a person having ordinary skill in the art.

A.3. Claim Construction of Certain Terms in the '433 patent

[48] I understand that the determination of whether there is infringement involves a two-step analysis. The first step in an infringement analysis is to determine or construe the meaning of the terms of the asserted claims. The second step in an infringement analysis is to apply or compare each of the asserted claims, as construed, to the accused products or to the use of the accused products.

[49] I understand that claim terms by default are construed by their plain and ordinary meanings to a person of ordinary skill in the art. For purposes of my analysis, I have applied the plain and ordinary meaning of the claim terms. I reserve the right to supplement my report should Lancium use a different construction, if the Court provides a construction, or the like.

VI. OVERVIEW OF THE LANCIUM'S SMART RESPONSE SYSTEM

[50] I understand that Lancium uses and/or sells Bitcoin mining related and power arbitrage services under the product name Smart Response™. I understand that Lancium's Smart Response™ system acts as a "Controllable Load Resource" data center which alternately mines Bitcoin or sells energy to the grid based on conditions such as energy prices, Bitcoin pricing and hashtag rates, and the like, as explained in more detail below.

wherein the power option data specify: (i) a set of minimum power thresholds, and (ii) a set of time intervals, wherein each minimum power threshold in the set of minimum power thresholds is associated with a time interval in the set of time intervals.

[62] The systems conceived of and/or developed by Bearbox satisfy this aspect of claim 1 at least because the Bearbox systems calculated profitability at distinct time intervals, each with an associated power threshold, such as comparing mining profitability based on, inter alia, current power usage and energy price conditions on the one hand with profitability based, inter alia, on expected future power usage and energy price conditions. For example, the Bearbox system used multiple time intervals, including the day-ahead hourly intervals and real-time 5-minute intervals, each of which included an associated minimum power threshold used in periodically determining performance strategies (i.e. every five minutes). The Bearbox system also included custom PDU software capable of providing fine grain load control (i.e. the ability to turn on some but not all of the miners) and also was configured to work modularly with a variety of different miners that had different power requirements.[3]

[63] To the extent this feature is found not to be explicitly described in the Bearbox disclosure, it is my opinion that merely ordinary skill would have been required to modify the existing system to explicitly incorporate this feature. For example, the involvement of and communication with a QSE in connection with power option agreements (and the data associated with power option agreements) was well-known, conventional feature in the art at the time of the invention.[4]

[64] I list below certain exemplary modules and files that I considered pertinent to my analysis and opinions. The noted modules perform functions related to receiving power option data in which minimum power thresholds at various time intervals are used to determine a performance

[3] Ex. 5, Deposition of Austin Storms, dated February 23, 2022, pp. 99-100, 290.
[4] I discussed these issues and facts with Frank McCamant by telephone on April 1, 2022, and I understand that his report explains these concepts in additional detail. I reserve the right to supplement my report based on any additional information that may be included in his report.

[65] Bearbox conceived of and developed technology that includes a system that, responsive to receiving the power option data, determine a performance strategy for the set of computing systems based on a combination of at least a portion of the power option data and at least one condition in the set of conditions, wherein the performance strategy comprises a power consumption target for the set of computing systems for each time interval in the set of time intervals, wherein each power consumption target is equal to or greater than the minimum power threshold associated with each time interval.

[66] The systems conceived of and/or developed by Bearbox satisfy this aspect of claim 1 at least because the Bearbox system calculated profitability at distinct time intervals, each with an associated power threshold, such as comparing mining profitability based on, inter alia, current power usage and energy price conditions on the one hand with profitability based, inter alia, on expected future power usage and energy price condition. Each time interval included an associated minimum power threshold used in periodically determining performance strategies, such as, inter alia, whether to mine Bitcoin based on variables such as Bitcoin price and hashrate. The Bearbox system also included custom PDU software capable of providing fine grain load control (i.e. the ability to turn on some but not all of the miners) and also was configured to work modularly with a variety of different miners that had different power requirements. [5]

[67] I list below certain exemplary modules and files that I considered pertinent to my analysis and opinions. The noted modules perform functions related to determining a performance strategy based on the power option data and monitored conditions. Non-exhaustive examples are listed below with reference to the current claim language. A detailed analysis of each module is provided in the Appendix.

1. arb_main_AEC.py - Processes marginal power price data to determine profitability of Bitcoin mining based on several parameters, and controls power to mining systems based on outcomes.

[5] Ex.5, Deposition of Austin Storms, pp. 99-100, 290.

2. cgminer_sqlite_test.py - Remotely communicates with miners to retrieve status information
3. DA_LMP_import.py - Imports marketplace data and returns the day-ahead marginal power price (LMP)
4. DA_LMP_import_AEC.py - Imports marketplace data and returns the day-ahead marginal power price (LMP)
5. email_alert.py - Provides email alerts for mining machine states (on, off, restart, shutdown, etc)
6. EXELON4.py - Computes "break even" point for mining Bitcoin in dollars per kilowatt-hour.
7. get_current_RT_LMP.py - Fetches marketplace data and returns the real-time local market price (LMP)
8. miner_amort_breakeven_.py - Performs profitability determinations for dynamic power thresholds and manages mining system based on resulting performance strategy.
9. LMP_csv_import.py - Retrieves the marginal power pricing data from Southwest Power Pool marketplace
10. test_profit.py - Simulates a mining operation's profitability
11. test_test_test.py - Simulates a mining operation's profitability.

Claim 1(e): "provide instructions to the set of computing systems to perform one or more computational operations based on the performance strategy"

[68] Bearbox conceived of and developed technology that includes a system comprising providing instructions to the set of computing systems to perform one or more computational operations based on the performance strategy.

[69] The systems conceived of and/or developed by Bearbox satisfy this aspect of claim 1 at least because the Bearbox system instructed miners in accordance with the determined performance strategy, such as enabling certain miners to mine Bitcoin. The Bearbox system also included custom PDU software capable of providing fine grain load control (i.e. the ability to turn

examples are listed below with reference to the current claim language. A detailed analysis of each module is provided in the Appendix.

1. arb_main_AEC.py - Processes marginal power price data to determine profitability of Bitcoin mining based on several parameters, and controls power to mining systems based on outcomes.
2. cgminer_sqlite_test.py - Remotely communicates with miners to retrieve status information
3. email_alert.py - Provides email alerts for mining machine states (on, off, restart, shutdown, etc)
4. EXELON4.py - Computes "break even" point for mining Bitcoin in dollars per kilowatt-hour.
5. miner_amort_breakeven_.py - Performs profitability determinations for dynamic power thresholds and manages mining system based on resulting performance strategy.

A.2.v. Claim 5

[87] Claim 5 is reproduced below:

> **The system of claim 4, wherein the performance strategy further comprises:**
>
> **at least one power consumption target that is greater than a minimum power threshold when the price of power from the power grid is below a threshold price during the time interval associated with the minimum power threshold.**

[88] It is my opinion that Bearbox was in possession of each claim element of claim 5 of the of the '433 patent. The sub-sections below provide additional detail concerning the basis for my opinion.

[89] Bearbox conceived of and developed technology that includes a performance strategy that further comprises: at least one power consumption target that is greater than a minimum power threshold when the price of power from the power grid is below a threshold price during the time interval associated with the minimum power threshold.

[90] The systems conceived of and/or developed by Bearbox satisfy this aspect of claim 5 at least because the Bearbox system calculated profitability at distinct time intervals, each with

an associated power threshold, such as comparing mining profitability based on, inter alia, current power usage and energy price conditions on the one hand with profitability based, inter alia, on expected future power usage and energy price condition. Each time interval included an associated minimum power threshold used in periodically determining performance strategies, such as, inter alia, whether to mine Bitcoin based on variables such as Bitcoin price and hashrate. The Bearbox system also included custom PDU software capable of providing fine grain load control (i.e. the ability to turn on some but not all of the miners) and also was configured to work modularly with a variety of different miners that had different power requirements. [7]

[91] I list below certain exemplary modules and files that I considered pertinent to my analysis and opinions. The noted modules perform functions related to a performance strategy further comprises: at least one power consumption target that is greater than a minimum power threshold when the price of power from the power grid is below a threshold price during the time interval associated with the minimum power threshold. Non-exhaustive examples are listed below with reference to the current claim language.

1. arb_main_AEC.py - Processes marginal power price data to determine profitability of Bitcoin mining based on several parameters, and controls power to mining systems based on outcomes.
2. DA_LMP_import.py - Imports marketplace data and returns the day-ahead marginal power price (LMP)
3. DA_LMP_import_AEC.py - Imports marketplace data and returns the day-ahead marginal power price (LMP)
4. EXELON4.py - Computes “break even” point for mining Bitcoin in dollars per kilowatt-hour.
5. get_current_RT_LMP.py - Fetches marketplace data and returns the real-time local market price (LMP)
6. miner_amort_breakeven_.py - Performs profitability determinations for dynamic power thresholds and manages mining system based on resulting performance strategy.

[7] Ex. 5, Deposition of Austin Storms, pp. 99-100, 290.

7. LMP_csv_import.py - Retrieves the marginal power pricing data from Southwest Power Pool marketplace
8. test_profit.py - Simulates a mining operation's profitability
9. test_test_test.py - Simulates a mining operation's profitability.

A.2.vi. Claim 6

[92] Claim 6 is reproduced below:

> **The system of claim 1, wherein the control system is further configured to:**
>
> **receive subsequent power option data based, at least in part, on the power option agreement,**
>
> **wherein the subsequent power option data specify to decrease one or more minimum power thresholds of the set of minimum power thresholds.**

[93] It is my opinion that Bearbox was in possession of each claim element of claim 6 of the of the '433 patent. The sub-sections below provide additional detail concerning the basis for my opinion.

[94] Bearbox conceived of and developed technology wherein the control system was further capable of receiving subsequent power option data based, at least in part, on the power option agreement, wherein the subsequent power option data specify to decrease one or more minimum power thresholds of the set of minimum power thresholds.

[95] The systems conceived of and/or developed by Bearbox satisfy this aspect of claim 6 at least because the Bearbox system calculated profitability at distinct time intervals, each with an associated power threshold, such as comparing mining profitability based on, inter alia, current power usage and energy price conditions on the one hand with profitability based, inter alia, on expected future power usage and energy price condition. Each time interval included an associated minimum power threshold used in periodically determining performance strategies, such as, inter alia, whether to mine Bitcoin based on variables such as Bitcoin price and hashrate. The Bearbox system also included custom PDU software capable of providing fine grain load control (i.e. the

ability to turn on some but not all of the miners) and also was configured to work modularly with a variety of different miners that had different power requirements. [8]

[96] I list below certain exemplary modules and files that I considered pertinent to my analysis and opinions. The noted modules perform functions related to receiving power option data based on a power option agreement in which minimum power thresholds at various time intervals. Non-exhaustive examples are listed below with reference to the current claim language. A detailed analysis of each module is provided in the Appendix.

1. arb_main_AEC.py - Processes marginal power price data to determine profitability of Bitcoin mining based on several parameters, and controls power to mining systems based on outcomes.
2. DA_LMP_import.py - Imports marketplace data and returns the day-ahead marginal power price (LMP)
3. DA_LMP_import_AEC.py - Imports marketplace data and returns the day-ahead marginal power price (LMP)
4. EXELON4.py - Computes "break even" point for mining Bitcoin in dollars per kilowatt-hour.
5. get_current_RT_LMP.py - Fetches marketplace data and returns the real-time local market price (LMP)
6. miner_amort_breakeven_.py - Performs profitability determinations for dynamic power thresholds and manages mining system based on resulting performance strategy.
7. LMP_csv_import.py - Retrieves the marginal power pricing data from Southwest Power Pool marketplace

A.2.vii. Claim 7

[97] Claim 7 is reproduced below:

> **The system of claim 6, wherein the control system is further configured to:**
>
> **responsive to receiving the subsequent power option data, modify the performance strategy for the set of computing systems based on a combination of at least the portion of the subsequent power option data and at least one condition in the set of conditions,**

[8] Ex. 5, Deposition of Austin Storms, pp. 99-100, 290.

modified performance strategy. Non-exhaustive examples are listed below with reference to the current claim language. A detailed analysis of each module is provided in the Appendix.

1. arb_main_AEC.py - Processes marginal power price data to determine profitability of Bitcoin mining based on several parameters, and controls power to mining systems based on outcomes.
2. cgminer_sqlite_test.py - Remotely communicates with miners to retrieve status information
3. email_alert.py - Provides email alerts for mining machine states (on, off, restart, shutdown, etc)
4. test_profit.py - Simulates a mining operation's profitability
5. test_test_test.py - Simulates a mining operation's profitability.

A.2.ix. Claim 9

[106] Claim 9 is reproduced below:

> **The system of claim 1, wherein the control system is a remote master control system positioned remotely from the set of computing systems.**

[107] It is my opinion that Bearbox was in possession of each claim element of claim 9 of the of the '433 patent. The sub-sections below provide additional detail concerning the basis for my opinion.

[108] Bearbox conceived of and developed technology wherein the control system is a remote master control system positioned remotely from the set of computing systems.

[1] The systems conceived of and/or developed by Bearbox satisfy this aspect of claim 9 at least because the Bearbox system included individually addressable miners in communication with a control system over IP-based networking protocols. This feature was supported by Bearbox's networking capabilities, which included an Ethernet interface, a 48-port switch and on-site WAN or satellite interfaces[9] and custom PDU software capable of providing fine grain load

[9] *See e.g.* Ex. 4, May 9, 2019 email from A. Storms to M. McNamara, at BB00000090.

control (i.e. the ability to turn on some but not all of the miners) and also was configured to work modularly with a variety of different miners that had different power requirements. [10]

[109] To the extent this feature is found not to be explicitly described in the Bearbox disclosure, it is my opinion that merely ordinary skill would have been required to modify the existing system to explicitly incorporate this feature. For example, using IP-based protocols for communications between control systems physically remote from the resources under their control has been a conventional feature of computing systems for decades.

[110] I list below certain exemplary modules and files that I considered pertinent to my analysis and opinions. The noted modules perform functions related to remote master control system positioned remotely from the set of computing systems. Non-exhaustive examples are listed below with reference to the current claim language. A detailed analysis of each module is provided in the Appendix.

1. arb_main_AEC.py - Processes marginal power price data to determine profitability of Bitcoin mining based on several parameters, and controls power to mining systems based on outcomes.
2. cgminer_sqlite_test.py - Remotely communicates with miners to retrieve status information
3. DA_LMP_import.py - Imports marketplace data and returns the day-ahead marginal power price (LMP)
4. DA_LMP_import_AEC.py - Imports marketplace data and returns the day-ahead marginal power price (LMP)
5. email_alert.py - Provides email alerts for mining machine states (on, off, restart, shutdown, etc)
6. EXELON4.py - Computes “break even” point for mining Bitcoin in dollars per kilowatt-hour.
7. get_current_RT_LMP.py - Fetches marketplace data and returns the real-time local market price (LMP)

[10] Ex. 5, Deposition of Austin Storms, pp. 99-100, 290.

[129] It is my opinion that Bearbox was in possession of each claim element of claim 14 of the of the '433 patent. The sub-sections below provide additional detail concerning the basis for my opinion.

[130] Bearbox conceived of and developed technology that includes a system that determines the performance strategy for the set of computing systems such that the performance strategy comprises: a first power consumption target for the set of computing systems for the first time interval, wherein the first power consumption target is equal to or greater than the first minimum power threshold; and a second power consumption target for the set of computing systems for the second time interval, wherein the second power consumption target is equal to or greater than the second minimum power thresholds. For example, the Bearbox system calculated profitability could use dynamic power thresholds at multiple time intervals, such as current and day-ahead time intervals.

[131] The systems conceived of and/or developed by Bearbox satisfy this aspect of claim 14 at least because the Bearbox system calculated profitability at distinct time intervals, each with an associated power threshold, such as comparing mining profitability based on, inter alia, current power usage and energy price conditions on the one hand with profitability based, inter alia, on expected future power usage and energy price condition. Each time interval included an associated minimum power threshold used in periodically determining performance strategies, such as, inter alia, whether to mine Bitcoin based on variables such as Bitcoin price and hashrate. The Bearbox system also included custom PDU software capable of providing fine grain load control (i.e. the ability to turn on some but not all of the miners) and also was configured to work modularly with a variety of different miners that had different power requirements. [12]

[132] I list below certain exemplary modules and files that I considered pertinent to my analysis and opinions. The noted modules perform functions related to determining the performance strategy for the set of computing systems such that the performance strategy

[12] Ex. 5, Deposition of Austin Storms, pp. 99-100, 290.

comprises: a first power consumption target for the set of computing systems for the first time interval, wherein the first power consumption target is equal to or greater than the first minimum power threshold; and a second power consumption target for the set of computing systems for the second time interval, wherein the second power consumption target is equal to or greater than the second minimum power thresholds. Non-exhaustive examples are listed below with reference to the current claim language. A detailed analysis of each module is provided in the Appendix.

1. arb_main_AEC.py - Processes marginal power price data to determine profitability of Bitcoin mining based on several parameters, and controls power to mining systems based on outcomes.
2. DA_LMP_import.py - Imports marketplace data and returns the day-ahead marginal power price (LMP)
3. DA_LMP_import_AEC.py - Imports marketplace data and returns the day-ahead marginal power price (LMP)
4. EXELON4.py - Computes “break even” point for mining Bitcoin in dollars per kilowatt-hour.
5. get_current_RT_LMP.py - Fetches marketplace data and returns the real-time local market price (LMP)
6. miner_amort_breakeven_.py - Performs profitability determinations for dynamic power thresholds and manages mining system based on resulting performance strategy.
7. LMP_csv_import.py - Retrieves the marginal power pricing data from Southwest Power Pool marketplace

A.2.xv. Claim 15

[133] Claim 15 is reproduced below:

> **The system of claim 1, wherein a total duration of the set of time intervals corresponds to a twenty-four hour period.**

[134] It is my opinion that Bearbox was in possession of each claim element of claim 15 of the of the ’433 patent. The sub-sections below provide additional detail concerning the basis for my opinion.

> software in a large like super structure build. It's not specific to the housing in which the machines run.
>
> Q. Did you tell Mr. McNamara that?
>
> A. Yes.
>
> Q. What -- tell me everything you remember talking to either Mr. McNamara or his CFO.
>
> A. Yeah, so I talked with them about like their current physical infrastructure and what they were looking at from an electrical standpoint. I talked with them about … their electrical engineer they said on staff who didn't like the Digital Shovel electrical distribution and why I thought it was a bad idea as well. I talked to them about physical characteristics of my BearBox units and why I thought that they were different than other offerings in the market, and I talked with them about … some of the software that I was working on to offer flexibility for those units and … their load and how they … could be controlled and how you could really maximize the profitability depending on the setup.
>
> Q. Anything else?
>
> A. There's … a lot that goes into that and some of the ideas around kind of … how the development took place … from the physical side of the power distribution units to me writing the software and understanding how electricity moves through the market.[16]

[172] I understand that Mr. Storms also described the physical characteristics of his BearBox and control software that Mr. Storms believed provided fine grain load control over the mining machines within the build (i.e. the ability to turn on or off a subset of miners).[17] As Mr. Storms explained, dependent on variables such as power pricing, one could determine a strategy for how many machines to use mining, the break-even costs and the opportunity costs of those machines and how to calculate those values.[18] In Mr. Storms' words, his system could be used to "maximize profitability" by determining when it's most profitable to utilize the power to mine Bitcoin or to sell the power back to the grid, in both the day-ahead and real-time markets.[19]

[173] Mr. Storms testified that his discussions with Mr. McNamara and Lancium's CFO were "[e]xtremely specific":

> I shared with them how to design database tables for a miner management system that could effectively pull in individual data from individual miners that were mapped to PDUs[20] and relays within the

[16] Ex. 5, Deposition of Austin Storms, pp. 95-97.
[17] Ex. 5, Deposition of Austin Storms, pp. 99-100.
[18] Ex. 5, Deposition of Austin Storms, pp. 100-101.
[19] Ex. 5, Deposition of Austin Storms, pp. 104-105.
[20] I understand a PDU refers to a Power Distribution Unit.

to the grid (depicted with green dollar signs in the middle of the diagram). The diagram indicates that the system may periodically (such as every 5-minutes, hourly, or the like) re-evaluate the monitored conditions and implement a performance strategy based on those conditions.

[178] In addition, Bearbox also provided a comma-separated value (.CSV) file[25] that described various monitored conditions, including Bitcoin price, Bitcoin block height, real time LMP day ahead LMP, an estimated network hash rate and a network difficulty. This proprietary .CSV file also described and/or explained how to determine a generated mining revenue figure to be expect from using power to mine Bitcoin, a real time LMP revenue figure based on selling energy to the grid at the current real time energy price, a day ahead LMP revenue figure based on selling energy to the grid in the future at the day ahead energy price, and a realized revenue figure that represented the most profitable of the three other revenue figures. In some instances, the most profitable option was to mine Bitcoin (*see, e.g.,* row 2 and cells H2 and L2), while in other instances, the most profitable option was to sell energy to the grid (*see, e.g.,* row 7 and cells K7 and L7).

A.2. My Opinions Concerning Whether the Information Provided by Bearbox to Lancium Disclosed The Inventions Claimed in the '433 Patent

[179] In my opinion, the information provided by Bearbox to Lancium would have enabled a person of ordinary skill the art to make and use the invention recited in claims 1-20, either by its explicit description or because it was described in such detail that only ordinary skill was required to modify the information to arrive at the claimed inventions.

A.3. The Claims of the '433 Patent

[180] I understand claims 1, 17 and 20 are the only Asserted Claims written in independent form.

A.3.i. Claim 1

[181] Claim 1 is reproduced below:

[25] Ex. 4, BB00000097.

Q. In the context you're talking about, who sells the power back to the grid?

A. Variety of different options there. It could be the generator sells the power back. It could be the mining facility sells the power back. It could be a different market participant depending on the ISO.

Q. And what we've just been discussing, is that part of what you maintain you talked to Mr. McNamara about regarding how load can be controlled to maximize profitability?

A. Yes

Q. So anything else other than what we just -- so how -- in your memory, how specific were you with your discussions with Mr. McNamara and his CFO?

A. Extremely specific.

Q. What do you mean by that?

A. I -- I shared with them how to design database tables for a miner management system that could effectively pull in individual data from individual miners that were mapped to PDUs and relays within the build to determine what the break-even cost is there, and then the power distribution unit and control system could at the same time toggle relays on or off or send a command to the miner to, you know, power on or power off or stop mining or change the mode which it's operating depending upon the power and price and things of that nature.

Q. And you did -- you did all of this over dinner?

A. Yeah. Almost like huddled up at the end of the table, yeah.

Q. Did anybody else hear these conversations?

A. Not to my knowledge, no.[64]

A.3. Lancium is using Bearbox's power arbitrage trade secrets

[302] In my opinion, Lancium is using Bearbox's power arbitrage trade secrets.

[303] It is my understanding that, in an email dated Fri, 16 Aug 2019, Mr. McNamara wrote the following: "As of today, we have a fixed price power contract with Calpine at Thomas Road for ATC power at~$34/MWh. This is cool. We now have two revenue sources: Bitcoin mining and selling power back to grid."[65] Based on this statement, I understand that this was the first such instance of Lancium engaging in power arbitrage of this nature.

[64] Ex. 5, Deposition of Austin Storms, pp. 104-106.
[65] Ex. 10, PX041, LANCIUM00033064.

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

BEARBOX LLC AND AUSTIN STORMS, *Plaintiffs*,	§	
v.	§	**CIVIL ACTION 1:21-cv-00534-MN-CJB**
LANCIUM LLC, MICHAEL T. MCNAMARA, **AND RAYMOND E. CLINE, JR.,** *Defendants.*	§	

Reply Expert Report of Dr. Stan McClellan

May 20, 2022

(SOURCE CODE – OUTSIDE ATTORNEYS EYES ONLY –

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provide instructions to the set of computing systems to perform one or more computational operations based on the performance strategy.

[22] It is my opinion that McNamara and Cline were not in possession of each claim element of claim 1 of the of the '433 patent at least as of May 1, 2019. The sub-sections below provide additional detail concerning the basis for my opinion.

Claim 1(b): "a control system configured to: monitor a set of conditions;"

[23] In paragraph 114, Dr. Ehsani alleges that '632 Application teaches cryptocurrency prices as an economic consideration. I disagree. While the '632 Application does mention cryptocurrency mining as a possible use of its computing systems, it nowhere describes monitoring cryptocurrency prices.

Claim 1(c): "receive power option data based, at least in part, on a power option agreement, wherein the power option data specify: (i) a set of minimum power thresholds, and (ii) a set of time intervals, wherein each minimum power threshold in the set of minimum power thresholds is associated with a time interval in the set of time intervals"

[24] In paragraph 116, Dr. Ehsani refers to Lancium's supposed "flash of insight" in which Cline and McNamara conceived of this aspect of claim 1. I note that this supposed "flash of insight" occurred August 27, 2019, nearly four months after Lancium received Storms information. I also note that this "flash of insight" appears to simply be repeating what MP2 representatives had told Lancium a few hours earlier that day. Ex. 6, LANCIUM00033240.

[25] As I explained in my Initial Report, the systems conceived of and/or developed by Bearbox and communicated to Lancium satisfy this aspect of claim 1 at least because the Bearbox systems calculated profitability at distinct time intervals, each with an associated power threshold, such as comparing mining profitability based on, inter alia, current power usage and energy price conditions on the one hand with profitability based, inter alia, on expected future power usage and energy price conditions. For example, the Bearbox system used multiple time intervals, including

the day-ahead hourly intervals and real-time 5-minute intervals, each of which included an associated minimum power threshold used in periodically determining performance strategies (i.e. every five minutes). The Bearbox system also included custom PDU software capable of providing fine grain load control (i.e. the ability to turn on some but not all of the miners) and also was configured to work modularly with a variety of different miners that had different power requirements.[1]

[26] In my opinion, the Lancium system did not consider multiple time intervals with associated power thresholds, as exemplified by the Lancium system described in the '632 Application (described above), until after its communications with Storms.

[27] In addition, I also explained that, to the extent this feature is found not to be explicitly described in the Bearbox disclosure, it is my opinion that merely ordinary skill would have been required to explicitly incorporate this feature. For example, the involvement of and communication with a QSE in connection with power option agreements (and the data associated with power option agreements) was well-known, conventional feature in the art at the time of the invention.[2] Dr. Ehsani appears to agree with me to the extent he states that McNamara and Cline were familiar with these well-known principles.

Claim 1(d): responsive to receiving the power option data, determine a performance strategy for the set of computing systems based on a combination of at least a portion of the power option data and at least one condition in the set of conditions, wherein the performance strategy comprises a power consumption target for the set of computing systems for each time interval in the set of time intervals, wherein each power consumption target is equal to or greater than the minimum power threshold associated with each time interval"

[1] Ex. 7, Deposition of Austin Storms, dated February 23, 2022, pp. 99-100, 290.
[2] I discussed these issues and facts with Frank McCamant by telephone on April 1, 2022, and I have now since reviewed his report and my opinions have not changed. I reserve the right to supplement my report based on any additional information that may be included in his supplemental report.

[77] In my experience writing code and simulations, a system designer will typically make many assumptions about real-world variables in order to test other aspects of the system. For example, in simulating a process that utilizes energy, one may assume an endless supply of power so that other aspects, such as logic simulating a real-time profitability determination and the like, can be tested more specifically. As the software is eventually released into a real-world application, those assumed variables may be updated in the software to account for the real-world environment in which the software operates. Based on my experience writing software, it is my opinion that a POSA would understand that Mr. Storms' simulation assumed an unlimited amount of power to test his profitability determination algorithm, and that (1) any real-world system will necessarily need to account for power availability and (2) replacing Mr. Storms' assumed power availability with data from an ISO or QSE was a well-known, conventional capability that would have required merely ordinary skill to implement.

[78] While Dr. Ehsani eventually discusses the profitability spreadsheet in paragraphs 185-187, he again oversimplifies the document, implying that a POSA would not be ability to decipher the process embodied in the spreadsheet. For example, Dr. Ehsani alleges that "The so-called .CSV file is nothing more than a hard-coded Excel spreadsheet—meaning that it shows values only. The document contains no source code, no mathematical formulas, no explicit logic, no methodology, and, other than the respective column headings, the document contains no description of any of the values or where those values came from." Yet, Cline contradicts this implication, as he had no issues deciphering the methodology embodied in the spreadsheet:

Q. And Column L, it says, "Realized revenue."

Do you see that?

A. Yes.

Q. Do you know what that means?

again conflates minute details of the simulation Storm built with the full breadth of the capabilities of which the system both described in the various documents and embodied in the simulation serve as proof of concept. A POSA would understand that are a finite number of sources of power (e.g. grid power and behind-the-meter power), and that any of these limited sources would predictably provide the power required to operate the system.

[83] In paragraph 196, Dr. Ehsani's mischaracterizes well-known principles and features of the art as supposed contributions by McNamara and/or Cline

Claim 1(b): "a control system configured to: monitor a set of conditions;"

[84] In paragraph 198, Dr. Ehsani's mischaracterizes well-known principles and features of the art as supposed contributions by McNamara and/or Cline.

Claim 1(c): "receive power option data based, at least in part, on a power option agreement, wherein the power option data specify: (i) a set of minimum power thresholds, and (ii) a set of time intervals, wherein each minimum power threshold in the set of minimum power thresholds is associated with a time interval in the set of time intervals"

[85] In paragraph 195, Dr. Ehsani alleges that because Bearbox's system diagram shows behind the meter power, "There is no indication of grid connection or grid power." Dr. Ehsani again conflates minute details of the simulation Storm built with the full breadth of the capabilities of which the system both described in the various documents and embodied in the simulation serve as proof of concept. A POSA would understand that are a finite number of sources of power (e.g. grid power and behind-the-meter power), and that any of these limited sources would predictably provide the power required to operate the system.

[86] In paragraph 200, Dr. Ehsani alleges that I fundamentally misunderstand the claim. I disagree as the plain and ordinary meaning of the language supports the positions set forth in my

Initial Report. Additionally, and as noted above, the Lancium system did not consider multiple time intervals with associated power thresholds until after its communications with Storms.

[87] In paragraph 201, Dr. Ehsani again conflates minute details of the simulation Storm built with the full breadth of the capabilities of which the system both described in the various documents and embodied in the simulation serve as proof of concept

[88] In paragraph 202, Dr. Ehsani' criticizes Mr. Storm's for not meeting ERCOT CLR requirements, but I note that the claim does not recite ERCOT CLR certification.

[89] In paragraph 203, Dr. Ehsani's mischaracterizes well-known principles and features of the art as supposed contributions by McNamara and/or Cline.

> **Claim 1(d): responsive to receiving the power option data, determine a performance strategy for the set of computing systems based on a combination of at least a portion of the power option data and at least one condition in the set of conditions, wherein the performance strategy comprises a power consumption target for the set of computing systems for each time interval in the set of time intervals, wherein each power consumption target is equal to or greater than the minimum power threshold associated with each time interval"**

[90] In paragraph 205, Dr. Ehsani restates his arguments relating to power option agreements and the data associated therewith. I disagree with this statement for the reasons set forth above.

[91] In paragraph 206, Dr. Ehsani criticizes Storms for acknowledging that certain aspects of the invention, such as Bitcoin mining, retrieving energy price and availability data, are conventional aspects of the art. I disagree that this acknowledgement by Storms implies a lack of contribution. All inventions utilize and build-upon well-known, conventional technologies.

[92] In paragraphs 206 and 207, Dr. Ehsani mischaracterizes well-known principles and features of the art as supposed contributions by McNamara and/or Cline. I also disagree with his analysis for the reasons I disagree with his analysis in paragraph 117 of his report.

[249] In paragraph 112, Mr. Baer states "None of the 11 identified source code files determine a performance strategy comprising a power consumption target for any time intervals where the power consumption target is equal to or greater than a minimum power threshold for a specific time interval and that is received by the system." I disagree for the reasons stated in my Initial Report. In addition, as noted above, in paragraph 104, Mr. Baer acknowledges that the system operates on a five minute interval. As a result, when a decision is made to turn on a miner(s) by the Bearbox software, the system operates at the energy level reflected in the ***kW_load*** variable for a 5-minute interval.

Claim 1(e): "provide instructions to the set of computing systems to perform one or more computational operations based on the performance strategy"

[250] In paragraphs 113 and 114, Mr. Baer indicates that his analysis of this limitation is limited to the source code only, and not the entirety of the evidence supporting Storms' conception.

[251] In paragraph 115, Mr. Baer restates his arguments relating to element 1(d), which I disagree with for the reasons states above.

[252] In paragraph 116, Mr. Baer restates his arguments set forth in paragraph 102. I disagree with his analysis for the reasons set forth above in my response to paragraph 102.

[253] In paragraph 117, Mr. Baer misleadingly cites Mr. Storms testimony in conflating minute details of the simulation Storm built with the full breadth of the capabilities of which the system both described in the various documents and embodied in the simulation serve as proof of concept. Mr. Storms actual testimony stated that he did conceive of the relevant functionality:

> Q. Had you written code that would tell the miners that they must maintain five megawatts of load and could not drop below that regardless of what the price of power was?

A. Yeah, so the system's definitely capable of doing that. I would say that the miners themselves aren't instructed to maintain a certain amount of load. The total build is, right.
Q. But had you written -- had you written code to ensure that the total build would, in fact, maintain that amount of load?
A. Yeah, I definitely -- I conceived of that at the time as it relates to, you know, buying power from various entities, and the system's capable of doing that because of how I architected it…

Ex. 7, Storms Dep. at 171:12-172:2

[254] In addition, as noted above, in paragraph 104, Mr. Baer acknowledges that the system operates on a five minute interval. As a result, when a decision is made to turn on a miner(s) by the Bearbox software, the system operates at the energy level reflected in the ***kW_load*** variable for a 5-minute interval.

[255] In paragraph 119, Mr. Baer again conflates minute details of the simulation Storm built with the full breadth of the capabilities of which the system both described in the various documents and embodied in the simulation serve as proof of concept in alleging that the Bearbox source code did not allow for turning individual miners on and/or off. I disagree for the reasons stated above.

[256] In paragraph 120, Mr. Baer states "to the extent turning all relays of connected PDUs on or off together (and thus turning all connected computers, such as Bitcoin miners on or off together) could be considered a "performance strategy" it is not a performance strategy as that term is used in the claims of the '433 patent and is not a performance strategy to maintain a power consumption target that is equal to or greater than a specified minimum power threshold for a specific time period." Mr. Baer again conflates minute details of the simulation Storm built with the full breadth of the capabilities of which the system both described in the various documents

Q. Was it a nondisclosure agreement or was it something else?

A. I believe it was a nondisclosure agreement.

Q. Did you have a nondisclosure agreement with GlidePath?

A. I believe so.

Q. Do you know at that time was GlidePath also working with a company called BuySellAds?

A. I don't believe they were.

Q. Did you ever work with BuySellAds?

A. Yes.

Q. What -- what -- what was the nature of your relationship with BuySellAds?

A. I was a contractor.

Q. When was that?

A. In late 2019 through I guess like mid 2020. It was -- it was part of the -- it was the original entity that Great American Mining spun out of.

Q. Okay. Prior to actually becoming a consultant for them did you have communications with them?

A. I believe so, yes.

Q. What did those communications relate to?

A. They related to certain things surrounding

the BearBox technology.

Q. What -- what specific things do you remember that those communications related to?

A. I -- I don't remember specific things. I imagine some high level -- high level descriptions of what the BearBox technology was, what it could be used for and -- and the like.

Q. Do you think you had specific conversations with them but you just don't remember or do you think the conversations were high level?

A. I don't believe I had any conversations with them.

Q. I mean e-mail as well. I don't just mean conversations.

A. Oh, no, yeah, I -- I don't recall. There could have been some specifics, but, again, I'd have to review some of that stuff.

Q. Did you have a nondisclosure agreement with the BuySellAd guys when you were having the -- having the e-mail exchanges with them that at least right now were characterized as a high level?

A. I don't believe that I had a nondisclosure agreement with them at the time.

Q. Did you understand your conversations with

them were confidential?

A. Yes.

Q. Why? What's the basis?

A. The basis for that confidentiality is the footer I include in the e-mails and the understanding between two parties.

Q. So that footer is included on all your e-mails, isn't it?

A. Yes.

Q. So other than the footer on the e-mail did you have any other basis for believing your communications with the BuySellAd guys at this time were confidential?

A. Other -- other than the -- I guess the verbal understanding that those communications were confidential and the e-mail footer, no.

Q. Maybe -- maybe I missed something, but I thought you said that at this time you hadn't talked to them, that it was just e-mail communication?

A. I met Todd who's the CEO of BuySellAds briefly at the Fidelity summit, but that was the only conversation I'd had with him at the time.

Q. Had you said anything to him before then?

A. I don't believe so.

Q. What did you and Todd talk about at the Fidelity conference?

A. We -- we talked about BearBox containers.

Q. What did you tell him about them?

A. Bunch of different ways I thought they could be utilized for, you know, stranded, essentially stranded energy assets and -- and monetizing those.

Q. And what's Todd's last name?

A. Garland.

Q. Garland. When did you speak to Todd about that?

A. It was during the day at the conference when I met him.

Q. How long did you talk to him?

A. Maybe 15 minutes.

Q. Did he tell you at that time he was going to keep the information confidential?

A. I don't recall.

Q. Did you ask him to?

A. I don't -- I don't think at that time -- the answer's no.

Q. So was the Fidelity conference -- was it a one-day conference or was it longer?

A. I believe it was a one-day summit.

Q. What makes it confidential?

A. That it wasn't published non-confidential. I'm not sure I understand the question.

Q. Well, I just -- just wondering, you know, if there's something specific about it that you believe makes it confidential?

A. I would say it's -- it's confidential because it wasn't published in an open source forum. It's something that resided in my machine.

Q. What is Github, G-I-T-H-U-B?

A. It's a version control mechanism.

Q. For software?

A. Correct.

Q. Is Github public or private?

A. It can be either.

Q. Can be either.

I'll mark Exhibit 51. So the Todd at todd@buysellads, is that Todd Garland?

A. Correct.

Q. And why are you sending Todd Garland this information?

A. Which information?

Q. The information in the attachment.

A. This is information to verify some of the

calculations around what the BearBox system could potentially do.

Q. And why are you sending it to Todd Garland?

A. Oh, so I sent it to Todd Garland because they were interested in pursuing cheap power and something that I believe I communicated to him at the Fidelity summit was that I had a way to do that via BearBox.

Q. So this is a follow-up from that summit?

A. Um-hum.

Q. And what is Exelon on this data?

A. Exelon is the specific pricing nodes within the -- within the Southwest Power Pool.

Q. And this is for the GlidePath wind farm, the Exelon sites?

A. Yes.

Q. How do I tell the difference between Exelon 4 data, Exelon 2, Exelon 7?

A. They're different CSV files.

Q. How do I tell that from this spreadsheet?

A. You can't tell it from the printouts. You would have to tell it from the file itself.

Q. Okay. Do you consider the information sent to Mr. Garland to be confidential?

A. I do.

Q. Was there an NDA at this time in place between you and he?

A. There was not.

Q. Was there an NDA between GlidePath and Mr. Garland?

A. I don't believe so.

Q. Then why are you sending it to him?

A. Because this was information that I -- I did myself.

Q. Okay.

A. Yeah, none of the information in these spreadsheets was provided to me by GlidePath, and I had the same information for, you know, every other pricing node.

Q. You just chose to use GlidePath nodes?

A. Yep. Those are the ones that I had the most complete modeling set for.

Q. Okay. Did you have any agreement with Mr. Garland to keep this confidential?

A. Nothing besides his word and the confidentiality notice at the bottom of this e-mail.

Q. Did he give you his word he was going to keep it confidential?

A. Not explicitly.

Q. So no?

A. No would be the correct answer there, yeah.

Q. So I'm trying to figure out if this -- if the columns on the data here, the headings are basically the same headings as the previous headings on the spreadsheets you sent out to Mr. Hakes. The version I have here is kind of crunched together. Yours might be horizontal. It might be better.

A. Yeah, there are -- there are a few differences. I reorganized some of the columns to make it flow better, but the columns and the data are the same.

Q. Okay. I hand you what I'll mark as Exhibit 52. So this looks like a further follow-up to your conversation with Mr. Garland?

A. Yes.

Q. And why are you sending him this information?

A. Because he wasn't -- he wasn't educated enough in the Bitcoin mining and power space to understand how some of these -- some of these calculations in this Excel spreadsheet were done.

Q. And so let's talk about the upper black box code here first.

A. Um-hum.

Q. So that's Python code for calculating get_breakeven_usdollar_perkilowatthour?

A. Yes.

Q. And what -- this is part of your Python code, I take it?

A. It is.

Q. Is this, again, this code that was running on your model on the system in your apartment or is this -- was running somewhere else?

A. Correct, in my apartment.

Q. Okay. What -- what specific code is -- code file is this running in, do you remember, is this part of?

A. There's -- there's a bunch of different code files that this snipet runs in.

Q. And which -- can you identify them for me?

A. Exelon 10_11, all those Exelon files, the Dennis Logic, new gen, basically anywhere that you would have to calculate a break-even U.S. dollar cost per kilowatt hour for a miner.

Q. Okay. And then what's the -- what's the second box down here represent?

A. It was a terrible attempt by me to give a fully amortized cost for five minutes -- five-minute

revenue. I'm not an accountant. It wasn't -- it didn't work well.

Q. Okay. So I noticed Ben Hakes isn't included on this. Why is Mr. Hakes not included in these e-mails?

A. I didn't have any reason to include Ben in these e-mails.

Q. I hand you one more here. This is Defendants' Exhibit 53. So can you tell me what Exhibit 53 is?

A. It's an e-mail from me to the GlidePath guys and Ben Hakes.

Q. And why are you sending this to the GlidePath guys and Ben Hakes?

A. Because I told them I was going to the conference/summit and that I would give them an update based on information that I learned at the summit.

Q. Is this -- is this -- I haven't gone through it and done a complete comparison, but is this basically the same type of data that you sent to Mr. Garland at BuySellAds the day -- on the 3rd?

A. Yes, it does look similar.

Q. What -- what's the purpose of sending this to GlidePath?

A. To send them the modeling data and these

settlement locations to prove that it is more profitable to mine Bitcoin than sell the power to the grid most of the time.

Q. And so the modeling that you're doing here is basically using the price information of power and calculating whether it's cheaper to mine -- whether the cost of power is above the cost of mining or below the cost of mining or is it more complex than that?

A. Ask the question one more time.

Q. Yeah, let me see if I can phrase it better.

So when you're calculating -- I'll just ask it off the data here. When you're calculating the data in the columns here, what is the -- what is the column that you're looking at to determine whether it's more profitable to mine or to not mine?

A. The comparison would be between the day-ahead LMP revenue column, the real-time LMP revenue column and the mining revenue column.

Q. And so if the mining revenue column is greater, it makes more sense to mine?

A. Correct, and that -- and that should represent itself in the realized revenue column.

Q. And if it's cheaper not to mine, then that would be represented in the day-ahead LMP and the

real-time LMP columns?

A. If it's cheaper not to mine. Can you ask that one more time?

Q. Well, so if I understand correctly, if it's more profitable to mine, it's reflected in the mining revenue column?

A. Well, the mining revenue column is always reflecting the mining revenue given the power.

Q. Yeah, I'm sorry. So if -- if it's more profitable to mine, you compare -- you compare the mining revenue column with what columns to make that determination?

A. The day-ahead LMP rev and the real-time LMP rev.

Q. And so if the mining revenue's greater, it's more profitable to mine?

A. Correct.

Q. And if the mining revenue is less, then it doesn't make sense to mine?

A. Correct.

Q. And then in the context of where the mining revenue column is less, what did your model contemplate doing at that point?

A. The model contemplates selling that amount of

A. Yeah, interested is like so many varying levels, right.

Q. So what -- what did they say to you about -- after you got -- after your conversation -- well, what did you tell them?

A. I told like how -- how my system worked. I told them how I communicated it to McNamara and the Lancium CFO at the dinner. I told them that I had e-mail correspondence going back and forth and text message correspondence as well and that I believe that what they were suing or getting sued for by Lancium was something that I taught McNamara and told him how to do in great detail.

Q. What did they respond?

A. I guess they didn't really respond. They just asked for me to send them a few things.

Q. And you sent them those things?

A. Yeah.

Q. Was it one conversation or more than one conversation?

A. Just one conversation.

Q. Let me mark this as Exhibit 67. And is this what you sent them, Exhibit 67?

A. Yes, it appears so.

Q. And you're aware -- after this -- they received this information do you know what they did with it?

A. I don't know what they did with it.

Q. And you're aware they ultimately settled the case with Lancium, aren't you?

A. I'm aware of the settlement, yes, sir.

Q. I'll mark Defendants' Exhibit 68. Can you just identify Exhibit 68?

A. Exhibit 68 is a printout of the BearBox Twitter account.

Q. And that's -- these tweets are created by you?

A. Yes.

Q. What's the purpose of this Twitter account?

A. To communicate things that BearBox as a company was working on and have presence within Twitter.

Q. Just to the general public?

A. Yeah, at the time it was locked but previous to that it was not.

Q. You say "at the time it was locked."

A. At the time of this printout the Twitter account was in private mode, so it wouldn't have been to the general public, but the purpose of the Twitter

account in totality was to communicate to the general public what I was working on.

Q. Okay. So it was available to the general public and then it was not, is that -- am I understanding you correctly?

A. You are, yes.

Q. Okay. And if you look at the first page, Page 717, it says: "Casually pitch the idea of using Bitcoin mining as load as a service to a PM at Entergy over the last year." Do you see that?

A. Yeah.

Q. Who is that?

A. I don't remember his name. I met him at a Mardi Gras event -- at a young life event at the -- it might be Avenue Pub. I want to say Charles Avenue. I know he's a PM for Entergy but that's about it.

Q. Okay. And so the stuff on this Twitter was public for a long time; is that fair, and then it was not?

A. Yeah, it was -- it was public for maybe two years or so.

Q. Okay. So let me mark Exhibit 69 which is BEARBOX1 through 43. So maybe just to save time here I would -- just trying to figure out sort of what all of

these different pictures are. There's pictures of different things, and maybe if we just go one at a time by Bates number and you just tell me quickly what it's a picture of, and then I'll stop and ask you questions if something else comes up.

A. Sounds good.

Q. Okay. So let's start with Page 1.

A. Page 1 is a picture of a single miner running in my apartment that's connected to a 120-volt circuit to the wall. There's an early relay controller called a Sanesmart 16 channel. There's a 25 amp solid state relay, the white part on the stool. Then there's a large white box on the stool that is an AC to DC inverter that applies voltage to a coil.

Q. Can you tell sort of what the date is in this picture just from looking at it roughly or not?

A. I can't. I think we produced metadata with these picture.

Q. Yeah. I'm just trying to figure out where in the process of creating the model in your apartment this is.

A. Oh, this is really early. That's -- that's the first relay controller and solid state relay that I bought. The solid state relay got like super hot with

Message

From:	Austin Storms [austin@bearbox.io]
on behalf of	Austin Storms <austin@bearbox.io> [austin@bearbox.io]
Sent:	5/3/2019 2:51:35 PM
To:	todd@buysellads.com
Subject:	Fwd: EXELON DATA MODELING DUMP 2
Attachments:	EXELON4.csv; ATT00002.bin; EXELON7_8.csv; ATT00004.bin; EXELON5_6.csv; ATT00006.bin; EXELON_HPW1.csv; ATT00008.bin; EXELON10_11.csv; ATT00010.bin; EXELON9.csv; ATT00012.bin

See attached.

Begin forwarded message:

From: Austin Storms <austin@bearbox.io>
Date: May 3, 2019 at 12:15:58 PM EDT
To: Austin Storms <austin@bearbox.io>
Cc: Ben Hakes <ben@paretoadvisors.com>
Subject: EXELON DATA MODELING DUMP 2

See attached.

Austin M. Storms
BearBox, LLC
611 O' Keefe Avenue
New Orleans, LA 70113
austin@bearbox.io

FILE PRODUCED NATIVELY

datetime	block_height	network_diff	est_network_hashrate	BTC_price	day_ahead_LMP	real_time_LMP	breakeven_mining_cost	day_ahead_LMP_rev	real_time_LMP_rev	mining_rev	realized_rev
17:54.4	574204	6.35303E+12	5.38327E+13	5320.85	0.0051274	0.0037112	0.0737773	0.1586418	0.1148245	2.2484294	2.2484294
22:57.3	574204	6.35303E+12	5.38327E+13	5320.01	0.0051274	0.0047409	0.0737656	0.1586418	0.1466834	2.2480744	2.2480744
28:00.5	574204	6.35303E+12	5.38327E+13	5319.51	0.0051274	0.0044381	0.0737587	0.1586418	0.1373148	2.2478631	2.2478631
33:03.6	574204	6.35303E+12	5.38327E+13	5321.94	0.0051274	0.0035711	0.0737924	0.1586418	0.1104898	2.24889	2.24889
38:06.6	574205	6.35303E+12	5.30839E+13	5321.95	0.0051274	0.0020195	0.0748335	0.1586418	0.0624833	2.2806172	2.2806172
43:09.6	574205	6.35303E+12	5.30839E+13	5326.19	0.0051274	0.0006489	0.0748931	0.1586418	0.020077	2.2824342	2.2824342
48:12.6	574206	6.35303E+12	5.44532E+13	5326.23	0.0051274	0.0036433	0.0730105	0.1586418	0.1127237	2.2250598	2.2250598
53:15.7	574206	6.35303E+12	5.44532E+13	5327.84	0.0051274	0.0056932	0.0730325	0.1586418	0.1761476	2.2257324	2.2257324
58:18.9	574207	6.35303E+12	5.39845E+13	5327.8	0.0051274	-0.0005791	0.073666	0.1586418	-0.0179174	2.2450369	2.2450369
03:21.8	574207	6.35303E+12	5.39845E+13	5327.2	0.0003049	0.0011538	0.0736577	0.0094336	0.0356986	2.244784	2.244784
08:24.9	574208	6.35303E+12	5.34662E+13	5325.01	0.0003049	-0.0046871	0.0743412	0.0094336	-0.1450189	2.2656139	2.2656139
13:28.6	574209	6.35303E+12	5.33477E+13	5325.01	0.0003049	-0.009641	0.0745063	0.0094336	-0.2982925	2.2706452	2.2706452
18:31.5	574209	6.35303E+12	5.33477E+13	5321.01	0.0003049	-0.0003526	0.0744503	0.0094336	-0.0109094	2.2689395	2.2689395
23:35.0	574210	6.35303E+12	5.36221E+13	5327.95	0.0003049	-0.0001515	0.074166	0.0094336	-0.0046874	2.2602762	2.2602762
28:38.3	574212	6.35303E+12	5.54528E+13	5325.19	0.0003049	-0.0193232	0.0716803	0.0094336	-0.5978598	2.184522	2.184522
33:41.4	574212	6.35303E+12	5.54528E+13	5323.36	0.0003049	-0.0316161	0.0716557	0.0094336	-0.9782021	2.1837713	2.1837713
38:44.4	574215	6.35303E+12	5.58834E+13	5323.1	0.0003049	-0.0307121	0.0711001	0.0094336	-0.9502324	2.1668382	2.1668382
43:47.3	574215	6.35303E+12	5.58834E+13	5323.1	0.0003049	-0.0298462	0.0711001	0.0094336	-0.9234414	2.1668382	2.1668382
48:50.3	574215	6.35303E+12	5.58834E+13	5325.88	0.0003049	-0.0268598	0.0711372	0.0094336	-0.8310422	2.1679698	2.1679698
53:53.3	574215	6.35303E+12	5.58834E+13	5326.72	0.0003049	-0.0306503	0.0711484	0.0094336	-0.9483203	2.1683117	2.1683117
58:56.4	574216	6.35303E+12	5.54406E+13	5326.69	0.0003049	-0.0316255	0.0717163	0.0094336	-0.978493	2.1856184	2.1856184
03:59.3	574216	6.35303E+12	5.54406E+13	5330.34	-0.0001867	-0.0309598	0.0717654	-0.0057765	-0.9578962	2.187116	2.187116
09:02.8	574219	6.35303E+12	5.59245E+13	5330.78	-0.0001867	-0.0034559	0.0711504	-0.0057765	-0.1069255	2.1683719	2.1683719
14:05.9	574220	6.35303E+12	5.59914E+13	5329.45	-0.0001867	-0.0195392	0.0710476	-0.0057765	-0.6045428	2.1652392	2.1652392
19:08.9	574220	6.35303E+12	5.59914E+13	5343.74	-0.0001867	-0.0179458	0.0712381	-0.0057765	-0.5552431	2.1710449	2.1710449
24:11.9	574223	6.35303E+12	5.60912E+13	5334.1	-0.0001867	-0.027899	0.0709831	-0.0057765	-0.8631951	2.1632744	2.1632744
29:14.9	574226	6.35303E+12	5.60441E+13	5330.7	-0.0001867	-0.030306	0.0709974	-0.0057765	-0.9376676	2.1637101	2.1637101
34:17.9	574226	6.35303E+12	5.60441E+13	5333.77	-0.0001867	-0.0264455	0.0710383	-0.0057765	-0.8182238	2.1649562	2.1649562
39:21.0	574227	6.35303E+12	5.56725E+13	5332.07	-0.0001867	-0.0197591	0.0714897	-0.0057765	-0.6113466	2.1787132	2.1787132
44:24.0	574227	6.35303E+12	5.56725E+13	5339.99	-0.0001867	-0.0202167	0.0715959	-0.0057765	-0.6255047	2.1819493	2.1819493
49:27.4	574228	6.35303E+12	5.52451E+13	5343.15	-0.0001867	-0.0198226	0.0721925	-0.0057765	-0.6133112	2.2001303	2.2001303
54:30.5	574229	6.35303E+12	5.5892E+13	5338.61	-0.0001867	-0.0294808	0.0712963	-0.0057765	-0.912136	2.1728179	2.1728179
59:33.7	574229	6.35303E+12	5.5892E+13	5336.4	-0.0001867	-0.0238324	0.0712668	-0.0057765	-0.7373745	2.1719184	2.1719184
04:36.7	574229	6.35303E+12	5.5892E+13	5340.73	-0.0002365	-0.0191566	0.0713246	-0.0073173	-0.5927052	2.1736808	2.1736808
09:39.8	574229	6.35303E+12	5.5892E+13	5341.69	-0.0002365	-0.0309356	0.0713374	-0.0073173	-0.9571475	2.1740715	2.1740715
14:43.1	574230	6.35303E+12	5.53347E+13	5347.99	-0.0002365	-0.030382	0.0721408	-0.0073173	-0.9400191	2.1985565	2.1985565
19:46.4	574230	6.35303E+12	5.53347E+13	5348.14	-0.0002365	-0.0302146	0.0721428	-0.0073173	-0.9348397	2.1986182	2.1986182
24:49.4	574231	6.35303E+12	5.49411E+13	5341.24	-0.0002365	-0.0278795	0.072566	-0.0073173	-0.8625917	2.211515	2.211515
29:53.0	574231	6.35303E+12	5.49411E+13	5342.72	-0.0002365	-0.0280598	0.0725861	-0.0073173	-0.8681702	2.2121278	2.2121278
34:56.1	574232	6.35303E+12	5.47061E+13	5349.99	-0.0002365	-0.0264476	0.0729971	-0.0073173	-0.8182887	2.2246529	2.2246529
39:59.3	574232	6.35303E+12	5.47061E+13	5346.06	-0.0002365	-0.0271937	0.0729435	-0.0073173	-0.8413731	2.2230187	2.2230187
45:02.9	574232	6.35303E+12	5.47061E+13	5350.69	-0.0002365	-0.0271939	0.0730067	-0.0073173	-0.8413793	2.224944	2.224944
50:06.0	574232	6.35303E+12	5.47061E+13	5358.36	-0.0002365	-0.0287285	0.0731113	-0.0073173	-0.8888598	2.2281334	2.2281334
55:09.1	574232	6.35303E+12	5.47061E+13	5358.38	-0.0002365	-0.0279997	0.0731116	-0.0073173	-0.8663107	2.2281417	2.2281417
00:12.7	574232	6.35303E+12	5.47061E+13	5374.99	0.0021778	-0.0258886	0.0733382	0.0673811	-0.8009933	2.2350485	2.2350485
05:15.7	574233	6.35303E+12	5.35475E+13	5380.56	0.0021778	-0.0030487	0.0750026	0.0673811	-0.0943268	2.2857722	2.2857722

10:18.8	574233	6.35303E+12	5.35475E+13	5358.81	0.0021778	-0.0011696	0.0746994	0.0673811	-0.0361874	2.2765324	2.2765324	
15:21.8	574233	6.35303E+12	5.35475E+13	5362.05	0.0021778	-0.0011696	0.0747446	0.0673811	-0.0361874	2.2779088	2.2779088	
20:24.8	574233	6.35303E+12	5.35475E+13	5360.02	0.0021778	-0.0182287	0.0747163	0.0673811	-0.563996	2.2770464	2.2770464	
25:28.4	574234	6.35303E+12	5.31615E+13	5359.43	0.0021778	-0.0150284	0.0752505	0.0673811	-0.4649787	2.2933275	2.2933275	
30:31.4	574234	6.35303E+12	5.31615E+13	5349.43	0.0021778	-0.0150284	0.0751101	0.0673811	-0.4649787	2.2890484	2.2890484	
35:34.9	574234	6.35303E+12	5.31615E+13	5344.78	0.0021778	-0.0164614	0.0750448	0.0673811	-0.5093157	2.2870587	2.2870587	
40:37.9	574236	6.35303E+12	5.29706E+13	5350.2	0.0021778	-0.0316425	0.0753917	0.0673811	-0.9790189	2.2976295	2.2976295	
45:40.9	574237	6.35303E+12	5.26741E+13	5349.03	0.0021778	-0.0303346	0.0757995	0.0673811	-0.9385525	2.3100592	2.3100592	
50:43.9	574238	6.35303E+12	5.2719E+13	5355.31	0.0021778	-0.0059234	0.0758238	0.0673811	-0.18327	2.3107995	2.3107995	
55:46.8	574238	6.35303E+12	5.2719E+13	5349.01	0.0021778	-0.0018265	0.0757346	0.0673811	-0.0565119	2.308081	2.308081	
00:49.8	574239	6.35303E+12	5.28168E+13	5350.18	0.011704	-0.0315837	0.0756109	0.3621218	-0.9771997	2.3043114	2.3043114	
05:52.7	574239	6.35303E+12	5.28168E+13	5349.09	0.011704	-0.0304342	0.0755955	0.3621218	-0.9416341	2.303842	2.303842	
10:55.6	574240	6.35303E+12	5.25658E+13	5348.27	0.011704	-0.0002699	0.0759448	0.3621218	-0.0083507	2.314487	2.314487	
15:58.4	574243	6.35303E+12	5.35108E+13	5354.35	0.011704	0.0001733	0.0746885	0.3621218	0.0053619	2.2762	2.2762	
21:01.3	574245	6.35303E+12	5.38531E+13	5358.66	0.011704	0.0007385	0.0742735	0.3621218	0.0228492	2.2635505	2.2635505	
26:04.2	574246	6.35303E+12	5.41667E+13	5357.51	0.011704	-0.0035407	0.0738276	0.3621218	-0.1095493	2.2499632	2.2499632	
31:07.4	574246	6.35303E+12	5.41667E+13	5361.77	0.011704	-0.0018346	0.0738863	0.3621218	-0.0567625	2.2517522	2.2517522	
36:10.5	574246	6.35303E+12	5.41667E+13	5361.98	0.011704	0.0045642	0.0738892	0.3621218	0.1412163	2.2518404	2.2518404	
41:13.6	574246	6.35303E+12	5.41667E+13	5366.22	0.011704	-0.0158533	0.0739476	0.3621218	-0.4905011	2.2536211	2.2536211	
46:16.7	574248	6.35303E+12	5.41479E+13	5365.01	0.011704	-0.0018765	0.0739567	0.3621218	-0.0580589	2.2538956	2.2538956	
51:19.6	574251	6.35303E+12	5.52479E+13	5360.99	0.011704	0.001301	0.0724298	0.3621218	0.0402529	2.2073645	2.2073645	
56:22.6	574251	6.35303E+12	5.52479E+13	5356.1	0.011704	0.0012559	0.0723638	0.3621218	0.0388575	2.2053511	2.2053511	
01:25.7	574252	6.35303E+12	5.50584E+13	5358.27	0.0165726	0.0046048	0.0726423	0.5127562	0.1424725	2.2138386	2.2138386	
06:29.7	574252	6.35303E+12	5.50584E+13	5360.85	0.0165726	0.157986	0.0726772	0.5127562	4.8880868	2.2149045	4.8880868	
11:34.4	574254	6.35303E+12	5.55733E+13	5360.76	0.0165726	0.0130504	0.0720027	0.5127562	0.4037794	2.1943466	2.1943466	
16:37.5	574255	6.35303E+12	5.5978E+13	5358.19	0.0165726	0.0094017	0.0714478	0.5127562	0.2908886	2.1774367	2.1774367	
21:40.6	574256	6.35303E+12	5.57331E+13	5364.52	0.0165726	0.0100556	0.0718465	0.5127562	0.3111203	2.1895872	2.1895872	
26:43.8	574257	6.35303E+12	5.59531E+13	5368.93	0.0165726	0.0078173	0.0716229	0.5127562	0.2418673	2.182771	2.182771	
31:46.9	574257	6.35303E+12	5.59531E+13	5369.94	0.0165726	0.0063222	0.0716363	0.5127562	0.1956089	2.1831816	2.1831816	
36:49.8	574257	6.35303E+12	5.59531E+13	5368.01	0.0165726	0.0062178	0.0716106	0.5127562	0.1923787	2.182397	2.182397	
41:53.7	574258	6.35303E+12	5.61961E+13	5363.48	0.0165726	0.007283	0.0712408	0.5127562	0.225336	2.1711281	2.1711281	
46:56.9	574258	6.35303E+12	5.61961E+13	5363.48	0.0165726	0.0070341	0.0712408	0.5127562	0.2176351	2.1711281	2.1711281	
52:00.0	574258	6.35303E+12	5.61961E+13	5367.12	0.0165726	0.0072728	0.0712892	0.5127562	0.2250204	2.1726015	2.1726015	
57:06.7	574258	6.35303E+12	5.61961E+13	5368.74	0.0165726	0.0087738	0.0713107	0.5127562	0.2714614	2.1732573	2.1732573	
02:09.6	574258	6.35303E+12	5.61961E+13	5363.48	0.0168443	0.009364	0.0712408	0.5211626	0.2897222	2.1711281	2.1711281	
07:12.8	574258	6.35303E+12	5.61961E+13	5360.86	0.0168443	0.013432	0.071206	0.5211626	0.4155861	2.1700675	2.1700675	
12:16.3	574260	6.35303E+12	5.46276E+13	5360.85	0.0168443	0.0108808	0.0732504	0.5211626	0.336652	2.2323717	2.2323717	
17:19.2	574260	6.35303E+12	5.46276E+13	5368.73	0.0168443	0.0083528	0.0733581	0.5211626	0.2584356	2.2356531	2.2356531	
22:22.2	574260	6.35303E+12	5.46276E+13	5367.1	0.0168443	0.0079968	0.0733358	0.5211626	0.247421	2.2349743	2.2349743	
27:25.3	574260	6.35303E+12	5.46276E+13	5367.89	0.0168443	0.0067041	0.0733466	0.5211626	0.2074249	2.2353033	2.2353033	
32:28.2	574261	6.35303E+12	5.36607E+13	5369.99	0.0168443	0.0077119	0.0746974	0.5211626	0.2386062	2.2764693	2.2764693	
37:31.2	574261	6.35303E+12	5.36607E+13	5367.41	0.0168443	0.007023	0.0746615	0.5211626	0.2172916	2.2753756	2.2753756	
42:34.3	574261	6.35303E+12	5.36607E+13	5361.03	0.0168443	0.0080277	0.0745727	0.5211626	0.248377	2.2726709	2.2726709	
47:37.2	574261	6.35303E+12	5.36607E+13	5361.94	0.0168443	0.0080701	0.0745854	0.5211626	0.2496889	2.2730567	2.2730567	
52:40.2	574261	6.35303E+12	5.36607E+13	5373.41	0.0168443	0.0102078	0.0747449	0.5211626	0.3158293	2.2779191	2.2779191	
57:43.1	574263	6.35303E+12	5.26165E+13	5380.52	0.0168443	0.0081298	0.0763292	0.5211626	0.251536	2.3262005	2.3262005	
02:46.1	574266	6.35303E+12	5.51716E+13	5372.23	0.0186731	0.0076622	0.0726821	0.5777457	0.2370685	2.215053	2.215053	

07:49.0	574268	6.35303E+12	5.60115E+13	5366.01	0.0186731	0.0072848	0.0715093	0.5777457	0.2253917	2.1793098	2.1793098
12:51.9	574269	6.35303E+12	5.58958E+13	5350.76	0.0186731	0.008065	0.0714536	0.5777457	0.2495311	2.1776143	2.1776143
17:54.9	574270	6.35303E+12	5.6144E+13	5352.52	0.0186731	0.0075466	0.0711611	0.5777457	0.2334918	2.1686995	2.1686995
22:57.9	574271	6.35303E+12	5.6095E+13	5356.14	0.0186731	0.007405	0.0712715	0.5777457	0.2291107	2.172064	2.172064
28:01.0	574271	6.35303E+12	5.6095E+13	5350.02	0.0186731	0.0072809	0.0711901	0.5777457	0.225271	2.1695821	2.1695821
33:04.1	574271	6.35303E+12	5.6095E+13	5354.6	0.0186731	0.0074885	0.071251	0.5777457	0.2316942	2.1714394	2.1714394
38:07.2	574273	6.35303E+12	5.53104E+13	5354.48	0.0186731	0.0079015	0.0722601	0.5777457	0.2444724	2.2021917	2.2021917
43:10.6	574274	6.35303E+12	5.53441E+13	5355.03	0.0186731	0.0099941	0.0722236	0.5777457	0.3092175	2.2010786	2.2010786
48:13.7	574274	6.35303E+12	5.53441E+13	5354.14	0.0186731	0.0113173	0.0722116	0.5777457	0.3501573	2.2007128	2.2007128
53:17.4	574274	6.35303E+12	5.53441E+13	5355.18	0.0186731	0.0164817	0.0722256	0.5777457	0.5099438	2.2011403	2.2011403
58:20.3	574274	6.35303E+12	5.53441E+13	5369.19	0.0186731	0.0138726	0.0724146	0.5777457	0.4292182	2.2068988	2.2068988
03:23.5	574274	6.35303E+12	5.53441E+13	5370.66	0.0212675	0.0091036	0.0724344	0.6580165	0.2816654	2.207503	2.207503
08:26.5	574274	6.35303E+12	5.53441E+13	5369.11	0.0212675	0.0082747	0.0724135	0.6580165	0.2560192	2.2068659	2.2068659
13:29.7	574274	6.35303E+12	5.53441E+13	5363.09	0.0212675	0.0151147	0.0723323	0.6580165	0.4676488	2.2043915	2.2043915
18:32.7	574275	6.35303E+12	5.36343E+13	5365.75	0.0212675	0.0155968	0.0746751	0.6580165	0.482565	2.2757902	2.2757902
23:35.6	574275	6.35303E+12	5.36343E+13	5369.99	0.0212675	0.0157182	0.0747341	0.6580165	0.4863211	2.2775885	2.2775885
28:38.4	574275	6.35303E+12	5.36343E+13	5367.99	0.0212675	0.0155447	0.0747063	0.6580165	0.480953	2.2767402	2.2767402
33:41.8	574277	6.35303E+12	5.50501E+13	5371.77	0.0212675	0.0198338	0.0728363	0.6580165	0.6136578	2.2197521	2.2197521
38:45.1	574279	6.35303E+12	5.54528E+13	5384.78	0.0212675	0.0190493	0.0724824	0.6580165	0.5893853	2.2089672	2.2089672
43:48.1	574281	6.35303E+12	5.67946E+13	5379.99	0.0212675	0.0170259	0.0707071	0.6580165	0.5267813	2.1548622	2.1548622
48:51.0	574281	6.35303E+12	5.67946E+13	5377.85	0.0212675	0.0169016	0.070679	0.6580165	0.5229355	2.154005	2.154005
53:54.3	574282	6.35303E+12	5.6096E+13	5375.53	0.0212675	0.0131463	0.0715283	0.6580165	0.4067465	2.1798898	2.1798898
58:57.4	574282	6.35303E+12	5.6096E+13	5379.99	0.0212675	0.0178311	0.0715877	0.6580165	0.5516942	2.1816984	2.1816984
04:00.6	574283	6.35303E+12	5.56063E+13	5387.53	0.0232187	0.0178063	0.0723193	0.7183866	0.5509269	2.2039945	2.2039945
09:05.0	574283	6.35303E+12	5.56063E+13	5405.85	0.0232187	0.0198195	0.0725652	0.7183866	0.6132153	2.211489	2.211489
14:08.3	574283	6.35303E+12	5.56063E+13	5409.86	0.0232187	0.019659	0.072619	0.7183866	0.6082495	2.2131295	2.2131295
19:11.6	574284	6.35303E+12	5.64188E+13	5401.19	0.0232187	0.020979	0.0714585	0.7183866	0.6490903	2.1777626	2.1777626
24:14.7	574284	6.35303E+12	5.64188E+13	5401.3	0.0232187	0.0205583	0.07146	0.7183866	0.6360738	2.1778069	2.1778069
29:17.8	574285	6.35303E+12	5.57835E+13	5408.19	0.0232187	0.0200525	0.072366	0.7183866	0.6204244	2.2054203	2.2054203
34:20.7	574285	6.35303E+12	5.57835E+13	5406.02	0.0232187	0.0204614	0.072337	0.7183866	0.6330757	2.2045354	2.2045354
39:23.6	574285	6.35303E+12	5.57835E+13	5400.59	0.0232187	0.0195542	0.0722643	0.7183866	0.6050069	2.202321	2.202321
44:26.7	574285	6.35303E+12	5.57835E+13	5401.93	0.0232187	0.0203561	0.0722823	0.7183866	0.6298177	2.2028675	2.2028675
49:29.7	574285	6.35303E+12	5.57835E+13	5404.01	0.0232187	0.0200873	0.0723101	0.7183866	0.6215011	2.2037157	2.2037157
54:32.7	574285	6.35303E+12	5.57835E+13	5401.27	0.0232187	0.0203132	0.0722734	0.7183866	0.6284904	2.2025983	2.2025983
59:36.0	574285	6.35303E+12	5.57835E+13	5405.56	0.0232187	0.0202868	0.0723309	0.7183866	0.6276736	2.2043478	2.2043478
04:39.2	574285	6.35303E+12	5.57835E+13	5407.94	0.0243161	0.0203594	0.0723627	0.7523401	0.6299198	2.2053183	2.2053183
09:42.2	574286	6.35303E+12	5.36818E+13	5415.78	0.0243161	0.0205197	0.0753047	0.7523401	0.6348795	2.2949778	2.2949778
14:45.4	574287	6.35303E+12	5.50908E+13	5406.57	0.0243161	0.0204524	0.0732539	0.7523401	0.6327973	2.2324797	2.2324797
19:48.6	574287	6.35303E+12	5.50908E+13	5390.94	0.0243161	0.0204571	0.0730422	0.7523401	0.6329427	2.2260258	2.2260258
24:51.7	574288	6.35303E+12	5.6446E+13	5374.99	0.0243161	0.0204895	0.0710776	0.7523401	0.6339451	2.1661531	2.1661531
29:54.9	574288	6.35303E+12	5.6446E+13	5391.07	0.0243161	0.020504	0.0712902	0.7523401	0.6343938	2.1726335	2.1726335
34:58.3	574289	6.35303E+12	5.61643E+13	5386.28	0.0243161	0.0215335	0.0715842	0.7523401	0.6662465	2.1815923	2.1815923
40:02.0	574289	6.35303E+12	5.61643E+13	5381.99	0.0243161	0.0216111	0.0715272	0.7523401	0.6686474	2.1798548	2.1798548
45:05.1	574289	6.35303E+12	5.61643E+13	5375.06	0.0243161	0.0210446	0.0714351	0.7523401	0.6511199	2.1770479	2.1770479
50:08.2	574290	6.35303E+12	5.56905E+13	5379.99	0.0243161	0.0216184	0.0721089	0.7523401	0.6688733	2.1975834	2.1975834
55:11.2	574292	6.35303E+12	5.59818E+13	5380.89	0.0243161	0.021687	0.0717456	0.7523401	0.6709958	2.1865119	2.1865119
00:14.3	574294	6.35303E+12	5.66874E+13	5378.02	0.0257744	0.0216429	0.0708148	0.7974599	0.6696313	2.1581456	2.1581456

05:17.2	574295	6.35303E+12	5.71185E+13	5388.44	0.0257744	0.0212776	0.0704165	0.7974599	0.6583289	2.1460054	2.1460054
10:20.9	574296	6.35303E+12	5.69506E+13	5391.26	0.0257744	0.0214204	0.070661	0.7974599	0.6627472	2.1534583	2.1534583
15:24.1	574298	6.35303E+12	5.77593E+13	5389.31	0.0257744	0.0214204	0.0696465	0.7974599	0.6627472	2.1225393	2.1225393
20:27.3	574298	6.35303E+12	5.77593E+13	5388.39	0.0257744	0.0220102	0.0696346	0.7974599	0.6809956	2.122177	2.122177
25:31.0	574298	6.35303E+12	5.77593E+13	5393.64	0.0257744	0.025403	0.0697024	0.7974599	0.7859688	2.1242446	2.1242446
30:34.5	574299	6.35303E+12	5.69012E+13	5395.3	0.0257744	0.0261091	0.0707755	0.7974599	0.8078156	2.1569462	2.1569462
35:39.5	574301	6.35303E+12	5.7613E+13	5391.27	0.0257744	0.0834465	0.0698488	0.7974599	2.5818347	2.1287047	2.5818347
40:44.8	574301	6.35303E+12	5.7613E+13	5390.99	0.0257744	0.2182033	0.0698452	0.7974599	6.7512101	2.1285942	6.7512101
45:49.0	574302	6.35303E+12	5.77583E+13	5394.98	0.0257744	0.15508	0.069721	0.7974599	4.7981752	2.1248099	4.7981752
50:52.9	574302	6.35303E+12	5.77583E+13	5395.4	0.0257744	0.1766657	0.0697264	0.7974599	5.4660368	2.1249753	5.4660368
55:56.9	574304	6.35303E+12	5.7411E+13	5395.01	0.0257744	0.174439	0.0701432	0.7974599	5.3971427	2.1376776	5.3971427
01:01.0	574305	6.35303E+12	5.8471E+13	5392.45	0.0279426	0.2174554	0.0688389	0.864544	6.7280701	2.0979265	6.7280701
06:05.1	574305	6.35303E+12	5.8471E+13	5393.6	0.0279426	0.0374936	0.0688536	0.864544	1.160052	2.0983739	2.0983739
11:09.9	574305	6.35303E+12	5.8471E+13	5393.59	0.0279426	0.0279332	0.0688534	0.864544	0.8642532	2.09837	2.09837
16:13.3	574307	6.35303E+12	5.89967E+13	5393.1	0.0279426	0.0249637	0.0682337	0.864544	0.7723769	2.0794831	2.0794831
21:16.3	574309	6.35303E+12	6.00748E+13	5397.01	0.0279426	0.025771	0.0670578	0.864544	0.7973547	2.0436461	2.0436461
26:19.2	574310	6.35303E+12	6.02983E+13	5396.18	0.0279426	0.025585	0.066799	0.864544	0.7915999	2.035759	2.035759
31:22.5	574311	6.35303E+12	6.01255E+13	5399.99	0.0279426	0.0297997	0.0670382	0.864544	0.9220027	2.0430488	2.0430488
36:25.4	574311	6.35303E+12	6.01255E+13	5402.65	0.0279426	0.0297908	0.0670712	0.864544	0.9217274	2.0440552	2.0440552
41:28.4	574312	6.35303E+12	5.99055E+13	5397.01	0.0279426	0.0298367	0.0672472	0.864544	0.9231475	2.0494202	2.0494202
46:31.4	574312	6.35303E+12	5.99055E+13	5395.01	0.0279426	0.0256849	0.0672223	0.864544	0.7946908	2.0486608	2.0486608
51:34.4	574315	6.35303E+12	5.97623E+13	5393.25	0.0279426	0.0284134	0.0673615	0.864544	0.8791106	2.0529008	2.0529008
56:37.4	574315	6.35303E+12	5.97623E+13	5390.48	0.0279426	0.025946	0.0673269	0.864544	0.8027692	2.0518464	2.0518464
01:41.6	574315	6.35303E+12	5.97623E+13	5386.7	0.0296022	0.210997	0.0672796	0.9158921	6.5282472	2.0504076	6.5282472
06:46.0	574317	6.35303E+12	6.04051E+13	5387.76	0.0296022	0.0271557	0.0665768	0.9158921	0.8401974	2.0289892	2.0289892
11:50.0	574319	6.35303E+12	6.0775E+13	5392.75	0.0296022	0.2243785	0.0662328	0.9158921	6.9422708	2.0185049	6.9422708
16:54.3	574320	6.35303E+12	6.21737E+13	5393.01	0.0296022	0.0486987	0.064746	0.9158921	1.5067378	1.9731924	1.9731924
21:59.4	574320	6.35303E+12	6.21737E+13	5399.78	0.0296022	0.0370626	0.0648273	0.9158921	1.1467168	1.9756694	1.9756694
27:02.3	574320	6.35303E+12	6.21737E+13	5404.34	0.0296022	0.0303724	0.064882	0.9158921	0.9397221	1.9773378	1.9773378
32:05.3	574321	6.35303E+12	6.17749E+13	5403.12	0.0296022	0.0280097	0.0652861	0.9158921	0.8666201	1.989654	1.989654
37:08.3	574321	6.35303E+12	6.17749E+13	5402.68	0.0296022	0.0278751	0.0652808	0.9158921	0.8624556	1.989492	1.989492
42:11.3	574321	6.35303E+12	6.17749E+13	5409.99	0.0296022	0.02741	0.0653692	0.9158921	0.8480654	1.9921839	1.9921839
47:14.3	574321	6.35303E+12	6.17749E+13	5409.99	0.0296022	0.027605	0.0653692	0.9158921	0.8540987	1.9921839	1.9921839
52:17.2	574321	6.35303E+12	6.17749E+13	5413.5	0.0296022	0.0276334	0.0654116	0.9158921	0.8549774	1.9934764	1.9934764
57:20.0	574321	6.35303E+12	6.17749E+13	5407.13	0.0296022	0.0265193	0.0653346	0.9158921	0.8205071	1.9911307	1.9911307
02:23.3	574321	6.35303E+12	6.17749E+13	5393.15	0.0289028	0.0265406	0.0651657	0.8942526	0.8211662	1.9859827	1.9859827
07:26.3	574321	6.35303E+12	6.17749E+13	5395.3	0.0289028	0.026646	0.0651917	0.8942526	0.8244272	1.9867744	1.9867744
12:29.4	574321	6.35303E+12	6.17749E+13	5397.72	0.0289028	0.0263766	0.0652209	0.8942526	0.816092	1.9876655	1.9876655
17:32.5	574321	6.35303E+12	6.17749E+13	5399.98	0.0289028	0.0264515	0.0652482	0.8942526	0.8184094	1.9884978	1.9884978
22:35.6	574321	6.35303E+12	6.17749E+13	5394.06	0.0289028	0.0265902	0.0651767	0.8942526	0.8227008	1.9863178	1.9863178
27:38.6	574321	6.35303E+12	6.17749E+13	5393.9	0.0289028	0.026498	0.0651747	0.8942526	0.8198481	1.9862589	1.9862589
32:41.7	574322	6.35303E+12	5.8824E+13	5396.06	0.0289028	0.0264345	0.0684716	0.8942526	0.8178834	2.086735	2.086735
37:45.1	574322	6.35303E+12	5.8824E+13	5392.94	0.0289028	0.0257328	0.0684321	0.8942526	0.7961728	2.0855284	2.0855284
42:48.3	574322	6.35303E+12	5.8824E+13	5392.23	0.0289028	0.0270329	0.068423	0.8942526	0.8363979	2.0852539	2.0852539
47:51.7	574323	6.35303E+12	5.85421E+13	5397.35	0.0289028	0.026317	0.0688178	0.8942526	0.814248	2.097283	2.097283
52:54.6	574323	6.35303E+12	5.85421E+13	5406.09	0.0289028	0.02719	0.0689292	0.8942526	0.8412586	2.1006792	2.1006792
57:58.1	574326	6.35303E+12	5.98016E+13	5402.76	0.0289028	0.0299238	0.0674359	0.8942526	0.9258424	2.0551695	2.0551695

03:01.0	574326	6.35303E+12	5.98016E+13	5405.16	0.0298595	0.0354935	0.0674658	0.9238529	1.0981689	2.0560824	2.0560824	
08:04.2	574326	6.35303E+12	5.98016E+13	5400.27	0.0298595	0.0283365	0.0674048	0.9238529	0.8767313	2.0542223	2.0542223	
13:10.1	574327	6.35303E+12	5.96067E+13	5403.01	0.0298595	0.0272184	0.0676595	0.9238529	0.8421373	2.0619836	2.0619836	
18:13.1	574327	6.35303E+12	5.96067E+13	5402.55	0.0298595	0.0254796	0.0676537	0.9238529	0.7883388	2.061808	2.061808	
23:16.5	574328	6.35303E+12	5.96752E+13	5405.49	0.0298595	0.026922	0.0676129	0.9238529	0.8329667	2.0605642	2.0605642	
28:19.6	574328	6.35303E+12	5.96752E+13	5407.99	0.0298595	0.0266884	0.0676442	0.9238529	0.8257391	2.0615172	2.0615172	
33:22.8	574329	6.35303E+12	5.94855E+13	5414.16	0.0298595	0.0268196	0.0679373	0.9238529	0.8297984	2.0704516	2.0704516	
38:26.4	574330	6.35303E+12	5.97035E+13	5414.16	0.0298595	0.0268326	0.0676893	0.9238529	0.8302006	2.0628912	2.0628912	
43:29.6	574331	6.35303E+12	5.96567E+13	5411.77	0.0298595	0.0255719	0.0677124	0.9238529	0.7911946	2.0635973	2.0635973	
48:32.6	574332	6.35303E+12	5.93593E+13	5409.61	0.0298595	0.0266704	0.0680245	0.9238529	0.8251822	2.0731087	2.0731087	
53:36.1	574333	6.35303E+12	5.9734E+13	5404.43	0.0298595	0.0266612	0.0675331	0.9238529	0.8248975	2.0581326	2.0581326	
58:39.0	574334	6.35303E+12	5.92562E+13	5401.16	0.0298595	0.0269553	0.0680365	0.9238529	0.833997	2.0734727	2.0734727	
03:42.1	574335	6.35303E+12	5.9018E+13	5401.4	0.028602	0.0279105	0.0683141	0.8849459	0.8635509	2.0819329	2.0819329	
08:45.2	574335	6.35303E+12	5.9018E+13	5400.05	0.028602	0.0267242	0.068297	0.8849459	0.8268467	2.0814126	2.0814126	
13:48.8	574337	6.35303E+12	6.04407E+13	5403.81	0.028602	0.0267657	0.0667358	0.8849459	0.8281308	2.0338321	2.0338321	
18:51.7	574338	6.35303E+12	6.00814E+13	5403.9	0.028602	0.026525	0.067136	0.8849459	0.8206835	2.0460298	2.0460298	
23:55.0	574341	6.35303E+12	6.05704E+13	5404.02	0.028602	0.026048	0.0665954	0.8849459	0.8059251	2.0295562	2.0295562	
28:58.6	574342	6.35303E+12	6.0482E+13	5406.89	0.028602	0.0265109	0.0667282	0.8849459	0.8202472	2.0336015	2.0336015	
34:01.7	574343	6.35303E+12	5.99395E+13	5402.19	0.028602	0.0255512	0.0672736	0.8849459	0.7905541	2.0502238	2.0502238	
39:04.8	574343	6.35303E+12	5.99395E+13	5399.98	0.028602	0.0262086	0.0672461	0.8849459	0.8108941	2.0493851	2.0493851	
44:07.8	574344	6.35303E+12	5.95861E+13	5399.01	0.028602	0.0260242	0.0676328	0.8849459	0.8051887	2.0611697	2.0611697	
49:11.2	574344	6.35303E+12	5.95861E+13	5394.85	0.028602	0.0266401	0.0675807	0.8849459	0.8242447	2.0595816	2.0595816	
54:14.4	574344	6.35303E+12	5.95861E+13	5401.23	0.028602	0.0260209	0.0676606	0.8849459	0.8050866	2.0620172	2.0620172	
59:17.3	574344	6.35303E+12	5.95861E+13	5398.44	0.028602	0.0262469	0.0676256	0.8849459	0.8120791	2.0609521	2.0609521	
04:21.4	574346	6.35303E+12	5.84022E+13	5394.51	0.0275993	0.2233023	0.0689463	0.8539223	6.9089732	2.1012014	6.9089732	
09:27.4	574347	6.35303E+12	5.86008E+13	5390.6	0.0275993	0.0264187	0.0686629	0.8539223	0.8173946	2.0925629	2.0925629	
14:30.5	574347	6.35303E+12	5.86008E+13	5397.94	0.0275993	0.0265111	0.0687564	0.8539223	0.8202534	2.0954122	2.0954122	
19:33.5	574348	6.35303E+12	5.87322E+13	5396.99	0.0275993	0.0266306	0.0685905	0.8539223	0.8239508	2.0903567	2.0903567	
24:36.5	574348	6.35303E+12	5.87322E+13	5396.21	0.0275993	0.026318	0.0685806	0.8539223	0.8142789	2.0900545	2.0900545	
29:41.0	574349	6.35303E+12	5.84595E+13	5396.31	0.0275993	0.2222834	0.0689017	0.8539223	6.8774484	2.0998406	6.8774484	
34:45.8	574350	6.35303E+12	5.91267E+13	5395.07	0.0275993	0.0360184	0.0681086	0.8539223	1.1144093	2.07567	2.07567	
39:49.9	574350	6.35303E+12	5.91267E+13	5395.47	0.0275993	0.026792	0.0681136	0.8539223	0.8289445	2.0758239	2.0758239	
44:54.1	574351	6.35303E+12	5.92508E+13	5395.05	0.0275993	0.0245607	0.0679657	0.8539223	0.7599081	2.0713145	2.0713145	
49:58.3	574351	6.35303E+12	5.92508E+13	5393.06	0.0275993	0.0251914	0.0679406	0.8539223	0.7794219	2.0705505	2.0705505	
55:03.7	574351	6.35303E+12	5.92508E+13	5391.73	0.0275993	0.0244349	0.0679238	0.8539223	0.7560158	2.0700399	2.0700399	
00:06.8	574351	6.35303E+12	5.92508E+13	5391.02	0.0287438	0.0246767	0.0679149	0.8893332	0.7634971	2.0697673	2.0697673	
05:09.8	574351	6.35303E+12	5.92508E+13	5365.12	0.0287438	0.0247456	0.0675886	0.8893332	0.7656289	2.0598235	2.0598235	
10:12.8	574351	6.35303E+12	5.92508E+13	5371.89	0.0287438	0.0222708	0.0676739	0.8893332	0.6890586	2.0624227	2.0624227	
15:16.2	574351	6.35303E+12	5.92508E+13	5379.7	0.0287438	0.0239242	0.0677723	0.8893332	0.7402147	2.0654212	2.0654212	
20:19.5	574353	6.35303E+12	5.95341E+13	5378.3	0.0287438	0.0226519	0.0674322	0.8893332	0.7008498	2.0550568	2.0550568	
25:22.4	574353	6.35303E+12	5.95341E+13	5381.03	0.0287438	0.0245188	0.0674664	0.8893332	0.7586117	2.0560999	2.0560999	
30:25.5	574353	6.35303E+12	5.95341E+13	5392.25	0.0287438	0.024939	0.0676071	0.8893332	0.7716127	2.0603871	2.0603871	
35:29.0	574353	6.35303E+12	5.95341E+13	5394.16	0.0287438	0.0248882	0.067631	0.8893332	0.7700409	2.0611169	2.0611169	
40:32.2	574353	6.35303E+12	5.95341E+13	5399.99	0.0287438	0.0245715	0.0677041	0.8893332	0.7602422	2.0633446	2.0633446	
45:35.1	574355	6.35303E+12	6.01266E+13	5396.88	0.0287438	0.0230276	0.0669983	0.8893332	0.7124739	2.0418346	2.0418346	
50:38.3	574356	6.35303E+12	6.01278E+13	5394.77	0.0287438	0.0244562	0.0669709	0.8893332	0.7566748	2.0409989	2.0409989	
55:42.0	574356	6.35303E+12	6.01278E+13	5402.4	0.0287438	0.0216672	0.0670656	0.8893332	0.6703832	2.0438855	2.0438855	

00:45.1	574357	6.35303E+12	5.98782E+13	5408.98	0.0349099	0.0215159	0.0674272	1.0801123	0.6657019	2.0549051	2.0549051
05:48.5	574357	6.35303E+12	5.98782E+13	5415.88	0.0349099	0.021311	0.0675132	1.0801123	0.6593623	2.0575264	2.0575264
10:51.8	574359	6.35303E+12	5.99023E+13	5413.47	0.0349099	0.0215195	0.067456	1.0801123	0.6658133	2.0557835	2.0557835
15:54.9	574359	6.35303E+12	5.99023E+13	5409.99	0.0349099	0.0216145	0.0674127	1.0801123	0.6687526	2.0544619	2.0544619
20:57.9	574360	6.35303E+12	6.0023E+13	5408.83	0.0349099	0.0224358	0.0672626	1.0801123	0.6941637	2.049888	2.049888
26:01.1	574360	6.35303E+12	6.0023E+13	5402.81	0.0349099	0.0221931	0.0671877	1.0801123	0.6866545	2.0476064	2.0476064
31:04.4	574361	6.35303E+12	5.95038E+13	5407.93	0.0349099	0.024178	0.0678382	1.0801123	0.7480673	2.0674304	2.0674304
36:08.0	574361	6.35303E+12	5.95038E+13	5411.14	0.0349099	0.0353979	0.0678785	1.0801123	1.095211	2.0686576	2.0686576
41:11.6	574362	6.35303E+12	5.87448E+13	5422.09	0.0349099	0.0235493	0.0688946	1.0801123	0.7286153	2.0996263	2.0996263
46:14.8	574362	6.35303E+12	5.87448E+13	5435.74	0.0349099	0.0221814	0.0690681	1.0801123	0.6862925	2.1049121	2.1049121
51:17.9	574362	6.35303E+12	5.87448E+13	5435.55	0.0349099	0.0237741	0.0690657	1.0801123	0.7355707	2.1048385	2.1048385
56:21.6	574363	6.35303E+12	5.80502E+13	5427.15	0.0349099	0.032206	0.0697841	1.0801123	0.9964536	2.1267343	2.1267343
01:24.7	574363	6.35303E+12	5.80502E+13	5428.1	0.0262015	0.0475413	0.0697964	0.8106744	1.4709278	2.1271066	2.1271066
06:27.9	574364	6.35303E+12	5.78645E+13	5441.31	0.0262015	0.0428348	0.0701907	0.8106744	1.3253087	2.1391255	2.1391255
11:31.0	574364	6.35303E+12	5.78645E+13	5428.95	0.0262015	0.0240965	0.0700313	0.8106744	0.7455457	2.1342664	2.1342664
16:33.9	574367	6.35303E+12	5.84533E+13	5433.35	0.0262015	0.0244572	0.069382	0.8106744	0.7567058	2.1144803	2.1144803
21:38.4	574367	6.35303E+12	5.84533E+13	5439.23	0.0262015	0.022965	0.0694571	0.8106744	0.7105371	2.1167686	2.1167686
26:41.8	574368	6.35303E+12	5.81378E+13	5433.99	0.0262015	0.0212901	0.0697668	0.8106744	0.6587157	2.1262058	2.1262058
31:45.4	574368	6.35303E+12	5.81378E+13	5446.09	0.0262015	0.0209848	0.0699221	0.8106744	0.6492697	2.1309403	2.1309403
36:48.4	574369	6.35303E+12	5.7527E+13	5440.51	0.0262015	0.0204925	0.0705922	0.8106744	0.634038	2.1513595	2.1513595
41:51.9	574370	6.35303E+12	5.73316E+13	5442.44	0.0262015	0.0198587	0.0708579	0.8106744	0.6144282	2.1594579	2.1594579
46:55.1	574370	6.35303E+12	5.73316E+13	5449.99	0.0262015	0.0197845	0.0709562	0.8106744	0.6121324	2.1624536	2.1624536
51:58.4	574370	6.35303E+12	5.73316E+13	5458.76	0.0262015	0.0194401	0.0710704	0.8106744	0.6014767	2.1659334	2.1659334
57:01.5	574373	6.35303E+12	5.75391E+13	5466.97	0.0262015	0.0197032	0.0709205	0.8106744	0.609617	2.1613669	2.1613669
02:05.0	574373	6.35303E+12	5.75391E+13	5466.18	0.0202338	0.0193913	0.0709103	0.6260338	0.5999668	2.1610546	2.1610546
07:08.3	574373	6.35303E+12	5.75391E+13	5468.2	0.0202338	0.0191518	0.0709365	0.6260338	0.5925567	2.1618532	2.1618532
12:11.9	574374	6.35303E+12	5.70787E+13	5462.25	0.0202338	0.0195416	0.0714308	0.6260338	0.6046171	2.1769189	2.1769189
17:14.8	574375	6.35303E+12	5.67247E+13	5457.72	0.0202338	0.0192754	0.071817	0.6260338	0.5963809	2.1886876	2.1886876
22:17.9	574376	6.35303E+12	5.68162E+13	5459.27	0.0202338	0.0212199	0.0717217	0.6260338	0.6565437	2.185782	2.185782
27:21.2	574376	6.35303E+12	5.68162E+13	5455.91	0.0202338	0.0193854	0.0716775	0.6260338	0.5997843	2.1844367	2.1844367
32:24.1	574377	6.35303E+12	5.63276E+13	5454.55	0.0202338	0.0196209	0.0722814	0.6260338	0.6070706	2.2028394	2.2028394
37:27.2	574377	6.35303E+12	5.63276E+13	5461.19	0.0202338	0.0218394	0.0723693	0.6260338	0.675711	2.205521	2.205521
42:30.2	574377	6.35303E+12	5.63276E+13	5464.3	0.0202338	0.0211972	0.0724106	0.6260338	0.6558414	2.206777	2.206777
47:33.3	574378	6.35303E+12	5.65074E+13	5471.12	0.0202338	0.0212136	0.0722702	0.6260338	0.6563488	2.2024995	2.2024995
52:36.4	574378	6.35303E+12	5.65074E+13	5465.8	0.0202338	0.0207927	0.0721999	0.6260338	0.6433261	2.2003578	2.2003578
57:39.3	574378	6.35303E+12	5.65074E+13	5467.45	0.0202338	0.0196864	0.0722217	0.6260338	0.6090972	2.2010221	2.2010221
03:12.6	574383	6.35303E+12	5.72964E+13	5476.66	0.0174418	0.0187668	0.0713471	0.5396493	0.5806448	2.1743674	2.1743674
08:16.0	574384	6.35303E+12	5.65611E+13	5472.78	0.0174418	0.0187175	0.0722235	0.5396493	0.5791195	2.2010766	2.2010766
13:19.1	574384	6.35303E+12	5.65611E+13	5477.51	0.0174418	0.0187832	0.0722859	0.5396493	0.5811522	2.2029789	2.2029789
18:22.2	574384	6.35303E+12	5.65611E+13	5475.27	0.0174418	0.0184439	0.0722564	0.5396493	0.5706543	2.202078	2.202078
23:25.4	574384	6.35303E+12	5.65611E+13	5485.01	0.0174418	0.0182748	0.0723849	0.5396493	0.5654223	2.2059953	2.2059953
28:28.7	574385	6.35303E+12	5.52675E+13	5483.01	0.0174418	0.0178749	0.0740521	0.5396493	0.5530494	2.2568058	2.2568058
33:31.7	574386	6.35303E+12	5.5002E+13	5486.59	0.0174418	0.0182033	0.0744582	0.5396493	0.5632101	2.2691808	2.2691808
38:35.5	574386	6.35303E+12	5.5002E+13	5489.7	0.0174418	0.0186322	0.0745004	0.5396493	0.5764803	2.270467	2.270467
43:38.3	574387	6.35303E+12	5.4816E+13	5485.01	0.0174418	0.0182313	0.0746893	0.5396493	0.5640764	2.2762247	2.2762247
48:41.2	574387	6.35303E+12	5.4816E+13	5494.56	0.0174418	0.0183895	0.0748194	0.5396493	0.5689711	2.2801879	2.2801879
53:45.0	574387	6.35303E+12	5.4816E+13	5496.86	0.0174418	0.0183358	0.0748507	0.5396493	0.5673097	2.2811424	2.2811424

58:48.0	574388	6.35303E+12	5.41076E+13	5491.71	0.0174418	0.0183548	0.0757595	0.5396493	0.5678975	2.3088405	2.3088405
03:51.1	574388	6.35303E+12	5.41076E+13	5493.27	0.0165491	0.0183691	0.0757811	0.5120292	0.56834	2.3094963	2.3094963
08:54.1	574388	6.35303E+12	5.41076E+13	5497.61	0.0165491	0.0183647	0.0758409	0.5120292	0.5682038	2.311321	2.311321
13:57.4	574390	6.35303E+12	5.36713E+13	5491.93	0.0165491	0.0183673	0.0763785	0.5120292	0.5682843	2.3277048	2.3277048
19:00.7	574393	6.35303E+12	5.4543E+13	5502.77	0.0165491	0.0188417	0.0753062	0.5120292	0.5829622	2.2950255	2.2950255
24:04.5	574393	6.35303E+12	5.4543E+13	5525.72	0.0165491	0.0193995	0.0756203	0.5120292	0.6002205	2.3045972	2.3045972
29:07.6	574393	6.35303E+12	5.4543E+13	5538.58	0.0165491	0.0193609	0.0757963	0.5120292	0.5990262	2.3099607	2.3099607
34:10.9	574393	6.35303E+12	5.4543E+13	5548.77	0.0165491	0.019547	0.0759358	0.5120292	0.6047842	2.3142106	2.3142106
39:14.1	574394	6.35303E+12	5.38779E+13	5544.99	0.0165491	0.0195134	0.0768207	0.5120292	0.6037446	2.3411795	2.3411795
44:17.1	574395	6.35303E+12	5.53825E+13	5512.91	0.0165491	0.0198083	0.0743014	0.5120292	0.6128688	2.2644017	2.2644017
49:20.1	574395	6.35303E+12	5.53825E+13	5524.53	0.0165491	0.0195319	0.074458	0.5120292	0.604317	2.2691746	2.2691746
54:23.3	574395	6.35303E+12	5.53825E+13	5525.3	0.0165491	0.01959	0.0744684	0.5120292	0.6061146	2.2694909	2.2694909
59:26.3	574395	6.35303E+12	5.53825E+13	5519.06	0.0165491	0.0192502	0.0743843	0.5120292	0.5956012	2.2669278	2.2669278
04:29.4	574395	6.35303E+12	5.53825E+13	5533.7	0.0172292	0.0192508	0.0745816	0.5330714	0.5956198	2.2729411	2.2729411
09:32.4	574395	6.35303E+12	5.53825E+13	5530.29	0.0172292	0.0191812	0.0745356	0.5330714	0.5934663	2.2715405	2.2715405
14:35.9	574396	6.35303E+12	5.44713E+13	5534.64	0.0172292	0.0190064	0.0758421	0.5330714	0.588058	2.3113551	2.3113551
19:39.0	574396	6.35303E+12	5.44713E+13	5544.31	0.0172292	0.0189667	0.0759746	0.5330714	0.5868297	2.3153934	2.3153934
24:42.5	574396	6.35303E+12	5.44713E+13	5549.76	0.0172292	0.0190067	0.0760493	0.5330714	0.5880673	2.3176694	2.3176694
29:46.0	574397	6.35303E+12	5.38389E+13	5535.92	0.0172292	0.0190806	0.0767506	0.5330714	0.5903538	2.3390422	2.3390422
34:48.9	574397	6.35303E+12	5.38389E+13	5548.11	0.0172292	0.0187167	0.0769196	0.5330714	0.5790947	2.3441927	2.3441927
39:52.5	574397	6.35303E+12	5.38389E+13	5576.84	0.0172292	0.0189742	0.0773179	0.5330714	0.5870617	2.3563317	2.3563317
44:55.6	574397	6.35303E+12	5.38389E+13	5588.49	0.0172292	0.0188554	0.0774794	0.5330714	0.5833861	2.3612541	2.3612541
49:58.8	574397	6.35303E+12	5.38389E+13	5580.14	0.0172292	0.0189482	0.0773636	0.5330714	0.5862573	2.3577261	2.3577261
55:01.8	574397	6.35303E+12	5.38389E+13	5586.36	0.0172292	0.0194129	0.0774499	0.5330714	0.6006351	2.3603541	2.3603541
00:05.2	574398	6.35303E+12	5.24135E+13	5582.24	0.0174125	0.0194554	0.0794975	0.5387428	0.6019501	2.422758	2.422758
05:09.1	574399	6.35303E+12	5.22154E+13	5575.01	0.0174125	0.0197929	0.0796957	0.5387428	0.6123923	2.4287994	2.4287994
10:12.1	574400	6.35303E+12	5.19602E+13	5555.62	0.0174125	0.0199592	0.0798086	0.5387428	0.6175376	2.4322397	2.4322397
15:15.6	574400	6.35303E+12	5.19602E+13	5578.34	0.0174125	0.0198711	0.080135	0.5387428	0.6148118	2.4421865	2.4421865
20:18.5	574400	6.35303E+12	5.19602E+13	5579.19	0.0174125	0.0198617	0.0801472	0.5387428	0.614521	2.4425586	2.4425586
25:21.5	574401	6.35303E+12	5.14241E+13	5571.72	0.0174125	0.0200228	0.0808744	0.5387428	0.6195054	2.4647197	2.4647197
30:24.5	574401	6.35303E+12	5.14241E+13	5570.27	0.0174125	0.0199827	0.0808533	0.5387428	0.6182647	2.4640783	2.4640783
35:27.4	574402	6.35303E+12	5.15991E+13	5586.79	0.0174125	0.0207606	0.080818	0.5387428	0.642333	2.4630024	2.4630024
40:30.4	574403	6.35303E+12	5.16659E+13	5618.48	0.0174125	0.0202218	0.0811714	0.5387428	0.6256625	2.4737726	2.4737726
45:33.7	574404	6.35303E+12	5.22163E+13	5610.56	0.0174125	0.0221828	0.0802027	0.5387428	0.6863358	2.444248	2.444248
50:36.6	574405	6.35303E+12	5.26766E+13	5659.03	0.0174125	0.0202739	0.0801886	0.5387428	0.6272745	2.4438195	2.4438195
55:39.5	574406	6.35303E+12	5.44332E+13	5660.39	0.0174125	0.0201747	0.0776194	0.5387428	0.6242052	2.365522	2.365522
00:42.4	574407	6.35303E+12	5.44179E+13	5674.28	0.0182174	0.0190667	0.0778319	0.5636464	0.5899237	2.3719968	2.3719968
05:45.2	574408	6.35303E+12	5.43366E+13	5665.31	0.0182174	0.0196886	0.0778251	0.5636464	0.6091653	2.3717894	2.3717894
10:47.9	574408	6.35303E+12	5.43366E+13	5669.02	0.0182174	0.0199558	0.077876	0.5636464	0.6174325	2.3733426	2.3733426
15:50.8	574409	6.35303E+12	5.45039E+13	5707.81	0.0182174	0.0201714	0.0781682	0.5636464	0.6241031	2.3822461	2.3822461
20:53.8	574409	6.35303E+12	5.45039E+13	5687.02	0.0182174	0.0225138	0.0778835	0.5636464	0.696577	2.3735691	2.3735691
25:56.9	574410	6.35303E+12	5.4739E+13	5681.9	0.0182174	0.0207126	0.0774792	0.5636464	0.6408478	2.3612479	2.3612479
36:03.0	574410	6.35303E+12	5.4739E+13	5722.07	0.0182174	0.0216808	0.0780269	0.5636464	0.670804	2.3779415	2.3779415
41:06.3	574410	6.35303E+12	5.4739E+13	5722.31	0.0182174	0.0214058	0.0780302	0.5636464	0.6622955	2.3780413	2.3780413
46:09.6	574410	6.35303E+12	5.4739E+13	5758.38	0.0182174	0.0229584	0.0785221	0.5636464	0.7103329	2.393031	2.393031
51:12.9	574410	6.35303E+12	5.4739E+13	5752.53	0.0182174	0.0234792	0.0784423	0.5636464	0.7264464	2.3905999	2.3905999
01:18.1	574412	6.35303E+12	5.33495E+13	5778.34	0.0231716	0.024996	0.0808465	0.7169293	0.7733762	2.46387	2.46387

06:21.2	574412	6.35303E+12	5.33495E+13	5720.48	0.0231716	0.0224302	0.080037	0.7169293	0.6939904	2.4391986	2.4391986	
11:24.7	574412	6.35303E+12	5.33495E+13	5706.21	0.0231716	0.0232405	0.0798373	0.7169293	0.7190611	2.4331139	2.4331139	
16:27.6	574413	6.35303E+12	5.25253E+13	5710.17	0.0231716	0.0234349	0.0811462	0.7169293	0.7250758	2.4730049	2.4730049	
21:30.3	574413	6.35303E+12	5.25253E+13	5738.9	0.0231716	0.0220916	0.0815545	0.7169293	0.6835141	2.4854476	2.4854476	
26:33.4	574413	6.35303E+12	5.25253E+13	5729.99	0.0231716	0.0254117	0.0814279	0.7169293	0.786238	2.4815887	2.4815887	
31:36.2	574414	6.35303E+12	5.19701E+13	5734.45	0.0231716	0.0252112	0.0823619	0.7169293	0.7800345	2.5100531	2.5100531	
36:39.1	574414	6.35303E+12	5.19701E+13	5744.82	0.0231716	0.025471	0.0825108	0.7169293	0.7880727	2.5145922	2.5145922	
41:41.9	574416	6.35303E+12	5.19215E+13	5727.38	0.0231716	0.0253676	0.0823374	0.7169293	0.7848735	2.509306	2.509306	
46:44.7	574418	6.35303E+12	5.19586E+13	5734.35	0.0231716	0.02236	0.0823788	0.7169293	0.6918184	2.510567	2.510567	
51:47.4	574420	6.35303E+12	5.25895E+13	5719.9	0.0231716	0.0361412	0.0811854	0.7169293	1.1182087	2.4741988	2.4741988	
56:50.2	574421	6.35303E+12	5.25734E+13	5661.86	0.0231716	0.0233862	0.0803862	0.7169293	0.723569	2.4498404	2.4498404	
01:53.1	574421	6.35303E+12	5.25734E+13	5685.95	0.0265606	0.0218135	0.0807282	0.821785	0.6749097	2.4602639	2.4602639	
06:56.0	574423	6.35303E+12	5.29406E+13	5678.18	0.0265606	0.0217023	0.0800587	0.821785	0.6714692	2.4398604	2.4398604	
11:59.2	574424	6.35303E+12	5.28202E+13	5698.16	0.0265606	0.0217781	0.0805235	0.821785	0.6738144	2.4540273	2.4540273	
17:02.4	574424	6.35303E+12	5.28202E+13	5677.65	0.0265606	0.028073	0.0802337	0.821785	0.8685786	2.4451943	2.4451943	
22:05.3	574426	6.35303E+12	5.30049E+13	5685.84	0.0265606	0.0482239	0.0800695	0.821785	1.4920475	2.4401892	2.4401892	
27:09.9	574426	6.35303E+12	5.30049E+13	5681.85	0.0265606	0.2355911	0.0800133	0.821785	7.2891886	2.4384768	7.2891886	
32:14.0	574427	6.35303E+12	5.28466E+13	5686.85	0.0265606	0.2281308	0.0803235	0.821785	7.058367	2.4479317	7.058367	
37:18.6	574427	6.35303E+12	5.28466E+13	5693.47	0.0265606	0.0487972	0.080417	0.821785	1.5097854	2.4507813	2.4507813	
42:21.3	574428	6.35303E+12	5.2354E+13	5717.6	0.0265606	0.0277079	0.0815177	0.821785	0.8572824	2.4843261	2.4843261	
47:24.0	574428	6.35303E+12	5.2354E+13	5722.32	0.0265606	0.0280138	0.081585	0.821785	0.866747	2.4863769	2.4863769	
52:27.1	574428	6.35303E+12	5.2354E+13	5715.88	0.0265606	0.028221	0.0814932	0.821785	0.8731577	2.4835787	2.4835787	
57:29.7	574429	6.35303E+12	5.15634E+13	5701.89	0.0265606	0.023821	0.0825403	0.821785	0.7370217	2.5154886	2.5154886	
02:32.4	574429	6.35303E+12	5.15634E+13	5701.69	0.0272743	0.0223137	0.0825374	0.8438668	0.6903859	2.5154004	2.5154004	
07:35.2	574429	6.35303E+12	5.15634E+13	5712.55	0.0272743	0.0230727	0.0826946	0.8438668	0.7138693	2.5201914	2.5201914	
12:38.1	574430	6.35303E+12	5.12815E+13	5715.02	0.0272743	0.0232288	0.083185	0.8438668	0.7186991	2.5351378	2.5351378	
17:41.8	574430	6.35303E+12	5.12815E+13	5703.4	0.0272743	0.0235449	0.0830159	0.8438668	0.7284792	2.5299833	2.5299833	
22:44.7	574430	6.35303E+12	5.12815E+13	5712.82	0.0272743	0.0235528	0.083153	0.8438668	0.7287236	2.5341619	2.5341619	
27:47.6	574430	6.35303E+12	5.12815E+13	5729.59	0.0272743	0.0236272	0.0833971	0.8438668	0.7310256	2.541601	2.541601	
32:50.4	574430	6.35303E+12	5.12815E+13	5736.47	0.0272743	0.0244433	0.0834972	0.8438668	0.7562757	2.5446529	2.5446529	
37:53.2	574430	6.35303E+12	5.12815E+13	5731.9	0.0272743	0.0241428	0.0834307	0.8438668	0.7469782	2.5426257	2.5426257	
42:56.3	574430	6.35303E+12	5.12815E+13	5735.01	0.0272743	0.0245142	0.083476	0.8438668	0.7584693	2.5440052	2.5440052	
47:59.3	574430	6.35303E+12	5.12815E+13	5723.33	0.0272743	0.0472294	0.083306	0.8438668	1.4612776	2.5388241	2.5388241	
53:02.1	574432	6.35303E+12	4.99455E+13	5721.98	0.0272743	0.0283038	0.0855142	0.8438668	0.8757196	2.6061222	2.6061222	
58:05.1	574432	6.35303E+12	4.99455E+13	5706.12	0.0272743	0.047005	0.0852772	0.8438668	1.4543347	2.5988986	2.5988986	
03:08.1	574433	6.35303E+12	4.98413E+13	5717.92	0.0273348	0.0264519	0.0856321	0.8457387	0.8184218	2.6097152	2.6097152	
08:11.2	574435	6.35303E+12	4.97656E+13	5722.49	0.0273348	0.0235867	0.085831	0.8457387	0.7297725	2.6157766	2.6157766	
13:14.2	574435	6.35303E+12	4.97656E+13	5731.99	0.0273348	0.024523	0.0859735	0.8457387	0.7587416	2.6201191	2.6201191	
18:17.4	574437	6.35303E+12	4.98823E+13	5729.41	0.0273348	0.027012	0.0857336	0.8457387	0.8357513	2.61281	2.61281	
23:20.3	574438	6.35303E+12	4.9928E+13	5727.98	0.0273348	0.0259483	0.0856339	0.8457387	0.8028404	2.6097702	2.6097702	
28:23.3	574438	6.35303E+12	4.9928E+13	5745.01	0.0273348	0.0476807	0.0858885	0.8457387	1.4752409	2.6175294	2.6175294	
33:26.3	574441	6.35303E+12	5.04581E+13	5733.7	0.0273348	0.0268104	0.0848189	0.8457387	0.8295138	2.5849309	2.5849309	
38:29.1	574441	6.35303E+12	5.04581E+13	5748.11	0.0273348	0.0266035	0.085032	0.8457387	0.8231123	2.5914274	2.5914274	
43:31.9	574442	6.35303E+12	5.28842E+13	5748.47	0.0273348	0.0478517	0.0811362	0.8457387	1.4805316	2.4726991	2.4726991	
48:35.1	574442	6.35303E+12	5.28842E+13	5745.69	0.0273348	0.0342983	0.081097	0.8457387	1.0611894	2.4715033	2.4715033	
53:37.9	574442	6.35303E+12	5.28842E+13	5748.13	0.0273348	0.0264623	0.0811314	0.8457387	0.8187436	2.4725529	2.4725529	
58:40.9	574443	6.35303E+12	5.28228E+13	5739.99	0.0273348	0.0253293	0.0811107	0.8457387	0.7836885	2.4719226	2.4719226	

03:44.2	574443	6.35303E+12	5.28228E+13	5735.16	0.0298497	0.0255622	0.0810425	0.9235497	0.7908945	2.4698426	2.4698426
08:47.3	574443	6.35303E+12	5.28228E+13	5746.65	0.0298497	0.0244251	0.0812048	0.9235497	0.7557126	2.4747908	2.4747908
13:50.5	574443	6.35303E+12	5.28228E+13	5760.39	0.0298497	0.0246582	0.081399	0.9235497	0.7629247	2.4807079	2.4807079
18:53.5	574443	6.35303E+12	5.28228E+13	5759.7	0.0298497	0.0249722	0.0813893	0.9235497	0.7726399	2.4804107	2.4804107
23:57.3	574444	6.35303E+12	5.21447E+13	5763.19	0.0298497	0.0248231	0.0824975	0.9235497	0.7680267	2.5141848	2.5141848
29:00.1	574445	6.35303E+12	5.19166E+13	5756.99	0.0298497	0.0277305	0.0827709	0.9235497	0.8579817	2.5225189	2.5225189
34:03.0	574446	6.35303E+12	5.17083E+13	5752.55	0.0298497	0.0341344	0.0830402	0.9235497	1.0561183	2.5307244	2.5307244
44:08.1	574446	6.35303E+12	5.17083E+13	5759.01	0.0298497	0.026299	0.0831334	0.9235497	0.8136911	2.5335664	2.5335664
49:11.1	574447	6.35303E+12	5.14685E+13	5756.94	0.0298497	0.0264755	0.0834907	0.9235497	0.819152	2.5444543	2.5444543
54:14.3	574448	6.35303E+12	5.19511E+13	5733.43	0.0298497	0.0263969	0.0823773	0.9235497	0.8167201	2.5105227	2.5105227
59:17.3	574448	6.35303E+12	5.19511E+13	5719.45	0.0298497	0.0296594	0.0821764	0.9235497	0.9176618	2.5044012	2.5044012
04:20.5	574448	6.35303E+12	5.19511E+13	5694.51	0.0289776	0.0266675	0.0818181	0.8965669	0.8250925	2.4934806	2.4934806
09:23.7	574449	6.35303E+12	5.17328E+13	5699.65	0.0289776	0.0248567	0.0822376	0.8965669	0.7690663	2.5062642	2.5062642
14:27.2	574450	6.35303E+12	5.16724E+13	5715.01	0.0289776	0.0254265	0.0825556	0.8965669	0.7866959	2.5159564	2.5159564
19:30.0	574450	6.35303E+12	5.16724E+13	5715.01	0.0289776	0.0257899	0.0825556	0.8965669	0.7979395	2.5159564	2.5159564
24:33.5	574450	6.35303E+12	5.16724E+13	5711.26	0.0289776	0.0254494	0.0825014	0.8965669	0.7874044	2.5143055	2.5143055
29:36.5	574450	6.35303E+12	5.16724E+13	5720.49	0.0289776	0.0255463	0.0826348	0.8965669	0.7904025	2.5183689	2.5183689
34:39.6	574450	6.35303E+12	5.16724E+13	5725.31	0.0289776	0.0252955	0.0827044	0.8965669	0.7826428	2.5204908	2.5204908
39:42.4	574452	6.35303E+12	5.09821E+13	5725.01	0.0289776	0.0258846	0.0838198	0.8965669	0.8008695	2.5544843	2.5544843
44:46.8	574454	6.35303E+12	5.11925E+13	5714.05	0.0289776	0.0259942	0.0833155	0.8965669	0.8042605	2.5391139	2.5391139
49:49.8	574454	6.35303E+12	5.11925E+13	5706.05	0.0289776	0.0248507	0.0831988	0.8965669	0.7688807	2.535559	2.535559
54:52.5	574454	6.35303E+12	5.11925E+13	5709.99	0.0289776	0.0240952	0.0832563	0.8965669	0.7455055	2.5373098	2.5373098
59:55.4	574454	6.35303E+12	5.11925E+13	5714.98	0.0289776	0.0237491	0.083329	0.8965669	0.7347972	2.5395272	2.5395272
04:58.3	574454	6.35303E+12	5.11925E+13	5715.01	0.0314491	0.0249024	0.0833295	0.9730352	0.7704803	2.5395405	2.5395405
10:01.4	574454	6.35303E+12	5.11925E+13	5705.02	0.0314491	0.0238843	0.0831838	0.9730352	0.7389802	2.5351013	2.5351013

FILE PRODUCED NATIVELY

datetime	block_height	network_diff	est_network_hashrate	BTC_price	day_ahead_LMP	real_time_LMP	breakeven_mining_cost	day_ahead_LMP_rev	real_time_LMP_rev	mining_rev	realized_rev
20:03.1	574204	6.35303E+12	5.38327E+13	5320.02	0.0062116	0.0053108	0.0737658	0.1921869	0.1643162	2.2480786	2.2480786
25:07.0	574204	6.35303E+12	5.38327E+13	5320.01	0.0062116	0.0063954	0.0737656	0.1921869	0.1978737	2.2480744	2.2480744
30:10.6	574204	6.35303E+12	5.38327E+13	5319.98	0.0062116	0.0064769	0.0737652	0.1921869	0.2003953	2.2480617	2.2480617
35:13.6	574205	6.35303E+12	5.30839E+13	5325.25	0.0062116	0.0050178	0.0748799	0.1921869	0.1552507	2.2820313	2.2820313
40:16.4	574205	6.35303E+12	5.30839E+13	5321.94	0.0062116	0.0038182	0.0748333	0.1921869	0.1181351	2.2806129	2.2806129
45:19.2	574206	6.35303E+12	5.44532E+13	5326.51	0.0062116	0.0054266	0.0730143	0.1921869	0.167899	2.2251767	2.2251767
50:22.3	574206	6.35303E+12	5.44532E+13	5326.54	0.0062116	0.0076717	0.0730147	0.1921869	0.2373624	2.2251893	2.2251893
55:26.0	574207	6.35303E+12	5.39845E+13	5328.24	0.0062116	0.0011776	0.0736721	0.1921869	0.0364349	2.2452223	2.2452223
00:29.0	574207	6.35303E+12	5.39845E+13	5325.77	0.0011643	0.0027475	0.0736379	0.0360234	0.0850077	2.2441815	2.2441815
05:31.8	574208	6.35303E+12	5.34662E+13	5325.77	0.0011643	-0.0033173	0.0743518	0.0360234	-0.1026373	2.2659373	2.2659373
10:34.6	574208	6.35303E+12	5.34662E+13	5325.01	0.0011643	-0.008352	0.0743412	0.0360234	-0.2584109	2.2656139	2.2656139
15:37.4	574209	6.35303E+12	5.33477E+13	5321.01	0.0011643	0.0010002	0.0744503	0.0360234	0.0309462	2.2689395	2.2689395
20:40.3	574209	6.35303E+12	5.33477E+13	5321.01	0.0011643	0.001291	0.0744503	0.0360234	0.0399435	2.2689395	2.2689395
25:43.5	574210	6.35303E+12	5.36221E+13	5326.26	0.0011643	-0.0191129	0.0741425	0.0360234	-0.5913531	2.2595592	2.2595592
30:46.5	574212	6.35303E+12	5.54528E+13	5327.73	0.0011643	-0.0318014	0.0717145	0.0360234	-0.9839353	2.1855639	2.1855639
35:49.4	574213	6.35303E+12	5.51131E+13	5321.02	0.0011643	-0.0309552	0.0720657	0.0360234	-0.9577539	2.1962672	2.1962672
40:52.8	574215	6.35303E+12	5.58834E+13	5323.1	0.0011643	-0.0303368	0.0711001	0.0360234	-0.9386206	2.1668382	2.1668382
45:56.2	574215	6.35303E+12	5.58834E+13	5323.1	0.0011643	-0.0268603	0.0711001	0.0360234	-0.8310577	2.1668382	2.1668382
50:59.1	574215	6.35303E+12	5.58834E+13	5326.69	0.0011643	-0.0314096	0.071148	0.0360234	-0.971813	2.1682995	2.1682995
56:02.0	574215	6.35303E+12	5.58834E+13	5326.69	0.0011643	-0.0323434	0.071148	0.0360234	-1.0007048	2.1682995	2.1682995
01:05.0	574216	6.35303E+12	5.54406E+13	5328.81	0.0005329	-0.0313858	0.0717448	0.0164879	-0.9710767	2.1864882	2.1864882
06:08.0	574216	6.35303E+12	5.54406E+13	5330.34	0.0005329	-0.0029529	0.0717654	0.0164879	-0.0913627	2.187116	2.187116
11:11.1	574219	6.35303E+12	5.59245E+13	5326.73	0.0005329	-0.0191457	0.0710963	0.0164879	-0.592368	2.1667245	2.1667245
16:14.0	574220	6.35303E+12	5.59914E+13	5332.99	0.0005329	-0.017496	0.0710948	0.0164879	-0.5413262	2.1666774	2.1666774
21:16.9	574220	6.35303E+12	5.59914E+13	5343.69	0.0005329	-0.0277353	0.0712374	0.0164879	-0.8581302	2.1710246	2.1710246
26:20.3	574225	6.35303E+12	5.59876E+13	5336.9	0.0005329	-0.0303035	0.0711518	0.0164879	-0.9375903	2.1684142	2.1684142
31:23.1	574226	6.35303E+12	5.60441E+13	5333.74	0.0005329	-0.0262667	0.0710379	0.0164879	-0.8126917	2.1649441	2.1649441
36:26.0	574227	6.35303E+12	5.56725E+13	5331.57	0.0005329	-0.0192771	0.071483	0.0164879	-0.5964335	2.1785089	2.1785089
41:28.9	574227	6.35303E+12	5.56725E+13	5332.07	0.0005329	-0.0198472	0.0714897	0.0164879	-0.6140724	2.1787132	2.1787132
46:31.8	574227	6.35303E+12	5.56725E+13	5343.43	0.0005329	-0.0195084	0.071642	0.0164879	-0.6035899	2.1833549	2.1833549
51:34.6	574228	6.35303E+12	5.52451E+13	5343.99	0.0005329	-0.0293344	0.0722038	0.0164879	-0.9076063	2.2004762	2.2004762
56:37.6	574229	6.35303E+12	5.5892E+13	5328.81	0.0005329	-0.0236519	0.0711654	0.0164879	-0.7317898	2.1688293	2.1688293
01:40.7	574229	6.35303E+12	5.5892E+13	5339.09	0.0004335	-0.0187133	0.0713027	0.0134125	-0.5789895	2.1730133	2.1730133
06:43.9	574229	6.35303E+12	5.5892E+13	5341.16	0.0004335	-0.0309148	0.0713303	0.0134125	-0.9565039	2.1738558	2.1738558
11:46.8	574230	6.35303E+12	5.53347E+13	5346.19	0.0004335	-0.0303946	0.0721165	0.0134125	-0.9404089	2.1978165	2.1978165
16:50.5	574230	6.35303E+12	5.53347E+13	5351.52	0.0004335	-0.0303078	0.0721884	0.0134125	-0.9377233	2.2000077	2.2000077
21:53.4	574231	6.35303E+12	5.49411E+13	5346.91	0.0004335	-0.0281596	0.0726431	0.0134125	-0.871258	2.2138627	2.2138627
26:56.3	574231	6.35303E+12	5.49411E+13	5345.36	0.0004335	-0.0283143	0.072622	0.0134125	-0.8760444	2.2132209	2.2132209
31:59.3	574231	6.35303E+12	5.49411E+13	5345.35	0.0004335	-0.0270691	0.0726219	0.0134125	-0.837518	2.2132168	2.2132168
37:02.5	574232	6.35303E+12	5.47061E+13	5343.98	0.0004335	-0.0275323	0.0729151	0.0134125	-0.8518494	2.2221538	2.2221538
42:05.7	574232	6.35303E+12	5.47061E+13	5350.73	0.0004335	-0.0275121	0.0730072	0.0134125	-0.8512244	2.2249606	2.2249606
47:08.6	574232	6.35303E+12	5.47061E+13	5364.94	0.0004335	-0.0290109	0.0732011	0.0134125	-0.8975972	2.2308695	2.2308695
52:11.5	574232	6.35303E+12	5.47061E+13	5358.68	0.0004335	-0.0282604	0.0731157	0.0134125	-0.8743768	2.2282664	2.2282664
57:14.5	574232	6.35303E+12	5.47061E+13	5363.38	0.0004335	-0.0265346	0.0731798	0.0134125	-0.8209805	2.2302208	2.2302208
02:17.5	574233	6.35303E+12	5.35475E+13	5374.99	0.0030406	-0.02651	0.074925	0.0940762	-0.8202194	2.283406	2.283406
07:20.4	574233	6.35303E+12	5.35475E+13	5371.65	0.0030406	-0.0027186	0.0748784	0.0940762	-0.0841135	2.2819871	2.2819871

12:23.4	574233	6.35303E+12	5.35475E+13	5364.6	0.0030406	-0.0006889	0.0747801	0.0940762	-0.0213146	2.2789921	2.2789921	
17:26.7	574233	6.35303E+12	5.35475E+13	5366.68	0.0030406	-0.0182862	0.0748091	0.0940762	-0.565775	2.2798757	2.2798757	
22:29.5	574234	6.35303E+12	5.31615E+13	5358.76	0.0030406	-0.0018507	0.0752411	0.0940762	-0.0572607	2.2930408	2.2930408	
27:32.4	574234	6.35303E+12	5.31615E+13	5358.18	0.0030406	-0.0146632	0.075233	0.0940762	-0.4536794	2.2927926	2.2927926	
32:35.2	574234	6.35303E+12	5.31615E+13	5349.69	0.0030406	-0.0031882	0.0751138	0.0940762	-0.0986429	2.2891597	2.2891597	
37:38.0	574235	6.35303E+12	5.26774E+13	5347.97	0.0030406	-0.0160738	0.0757796	0.0940762	-0.4973234	2.3094528	2.3094528	
42:41.4	574236	6.35303E+12	5.29706E+13	5347.88	0.0030406	-0.0316489	0.075359	0.0940762	-0.979217	2.2966332	2.2966332	
47:44.2	574237	6.35303E+12	5.26741E+13	5352.24	0.0030406	-0.0302898	0.075845	0.0940762	-0.9371664	2.3114455	2.3114455	
52:47.1	574238	6.35303E+12	5.2719E+13	5350.15	0.0030406	-0.0052788	0.0757508	0.0940762	-0.1633261	2.308573	2.308573	
57:50.1	574238	6.35303E+12	5.2719E+13	5357.76	0.0030406	-0.0014966	0.0758585	0.0940762	-0.0463048	2.3118566	2.3118566	
02:52.9	574239	6.35303E+12	5.28168E+13	5351.07	0.0126546	-0.0319016	0.0756235	0.3915333	-0.9870355	2.3046947	2.3046947	
07:55.6	574240	6.35303E+12	5.25658E+13	5350.11	0.0126546	-0.0306567	0.075971	0.3915333	-0.9485183	2.3152833	2.3152833	
12:58.4	574243	6.35303E+12	5.35108E+13	5352.35	0.0126546	0.0001377	0.0746606	0.3915333	0.0042604	2.2753498	2.2753498	
18:01.2	574243	6.35303E+12	5.35108E+13	5353.74	0.0126546	0.0004942	0.07468	0.3915333	0.0152905	2.2759407	2.2759407	
23:04.0	574245	6.35303E+12	5.38531E+13	5358.7	0.0126546	0.0010492	0.074274	0.3915333	0.0324622	2.2635674	2.2635674	
28:07.3	574246	6.35303E+12	5.41667E+13	5358.74	0.0126546	-0.0032429	0.0738446	0.3915333	-0.1003353	2.2504797	2.2504797	
33:10.6	574246	6.35303E+12	5.41667E+13	5361.99	0.0126546	-0.0011916	0.0738894	0.3915333	-0.0368681	2.2518446	2.2518446	
38:13.3	574246	6.35303E+12	5.41667E+13	5364.93	0.0126546	0.0049583	0.0739299	0.3915333	0.1534098	2.2530793	2.2530793	
43:16.3	574247	6.35303E+12	5.37144E+13	5365.93	0.0126546	-0.015444	0.0745663	0.3915333	-0.4778374	2.2724742	2.2724742	
48:19.5	574249	6.35303E+12	5.43573E+13	5360.33	0.0126546	-0.0011564	0.0736074	0.3915333	-0.035779	2.2432526	2.2432526	
53:23.3	574251	6.35303E+12	5.52479E+13	5359.19	0.0126546	0.0020084	0.0724055	0.3915333	0.0621399	2.2066234	2.2066234	
58:26.4	574252	6.35303E+12	5.50584E+13	5358.28	0.0126546	0.0019878	0.0726424	0.3915333	0.0615025	2.2138427	2.2138427	
03:29.4	574252	6.35303E+12	5.50584E+13	5362.38	0.017578	0.0053492	0.072698	0.5438633	0.1655042	2.2155367	2.2155367	
08:33.3	574253	6.35303E+12	5.55506E+13	5362.51	0.017578	0.1607356	0.0720555	0.5438633	4.9731595	2.195957	4.9731595	
13:36.3	574254	6.35303E+12	5.55733E+13	5360.24	0.017578	0.0139422	0.0719957	0.5438633	0.4313717	2.1941337	2.1941337	
18:39.2	574255	6.35303E+12	5.5978E+13	5358.19	0.017578	0.0102406	0.0714478	0.5438633	0.3168442	2.1774367	2.1774367	
23:42.2	574257	6.35303E+12	5.59531E+13	5367.35	0.017578	0.0108684	0.0716018	0.5438633	0.3362683	2.1821286	2.1821286	
28:45.1	574257	6.35303E+12	5.59531E+13	5368.93	0.017578	0.0086102	0.0716229	0.5438633	0.2663996	2.182771	2.182771	
33:48.1	574257	6.35303E+12	5.59531E+13	5368.01	0.017578	0.0070868	0.0716106	0.5438633	0.2192656	2.182397	2.182397	
38:50.8	574258	6.35303E+12	5.61961E+13	5368.01	0.017578	0.0070146	0.071301	0.5438633	0.2170317	2.1729618	2.1729618	
43:53.8	574258	6.35303E+12	5.61961E+13	5363.48	0.017578	0.0081289	0.0712408	0.5438633	0.2515082	2.1711281	2.1711281	
48:56.8	574258	6.35303E+12	5.61961E+13	5363.48	0.017578	0.0078774	0.0712408	0.5438633	0.2437268	2.1711281	2.1711281	
54:03.4	574258	6.35303E+12	5.61961E+13	5369.24	0.017578	0.0081243	0.0713173	0.5438633	0.2513658	2.1734597	2.1734597	
59:06.3	574258	6.35303E+12	5.61961E+13	5368.9	0.017578	0.0096472	0.0713128	0.5438633	0.2984844	2.1733221	2.1733221	
04:09.1	574258	6.35303E+12	5.61961E+13	5360.85	0.0179993	0.0101763	0.0712059	0.5568983	0.3148547	2.1700634	2.1700634	
09:12.1	574258	6.35303E+12	5.61961E+13	5360.96	0.0179993	0.0142381	0.0712073	0.5568983	0.4405268	2.170108	2.170108	
14:15.0	574260	6.35303E+12	5.46276E+13	5364.69	0.0179993	0.0117745	0.0733029	0.5568983	0.364303	2.2339708	2.2339708	
19:18.4	574260	6.35303E+12	5.46276E+13	5368.72	0.0179993	0.0091782	0.0733579	0.5568983	0.2839735	2.2356489	2.2356489	
24:21.3	574260	6.35303E+12	5.46276E+13	5366.48	0.0179993	0.008879	0.0733273	0.5568983	0.2747163	2.2347162	2.2347162	
29:24.2	574260	6.35303E+12	5.46276E+13	5367.76	0.0179993	0.0077838	0.0733448	0.5568983	0.2408308	2.2352492	2.2352492	
34:27.1	574261	6.35303E+12	5.36607E+13	5366.92	0.0179993	0.0086752	0.0746547	0.5568983	0.2684107	2.2751678	2.2751678	
39:30.1	574261	6.35303E+12	5.36607E+13	5366.01	0.0179993	0.0080915	0.074642	0.5568983	0.250351	2.2747821	2.2747821	
44:33.0	574261	6.35303E+12	5.36607E+13	5364.41	0.0179993	0.0090579	0.0746197	0.5568983	0.2802514	2.2741038	2.2741038	
49:35.8	574261	6.35303E+12	5.36607E+13	5364.3	0.0179993	0.0089835	0.0746182	0.5568983	0.2779495	2.2740572	2.2740572	
54:38.7	574261	6.35303E+12	5.36607E+13	5377.85	0.0179993	0.0111079	0.0748067	0.5568983	0.3436784	2.2798013	2.2798013	
59:41.4	574264	6.35303E+12	5.43564E+13	5373.51	0.0179993	0.0091005	0.0737896	0.5568983	0.2815695	2.2488057	2.2488057	
04:44.3	574267	6.35303E+12	5.54387E+13	5366.58	0.0197454	0.0086523	0.0722558	0.6109227	0.2677022	2.2020604	2.2020604	

09:47.0	574268	6.35303E+12	5.60115E+13	5357.31	0.0197454	0.008352	0.0713933	0.6109227	0.2584109	2.1757765	2.1757765	
14:50.2	574269	6.35303E+12	5.58958E+13	5342.94	0.0197454	0.0091438	0.0713492	0.6109227	0.2829092	2.1744317	2.1744317	
19:53.4	574270	6.35303E+12	5.6144E+13	5354.22	0.0197454	0.0085778	0.0711837	0.6109227	0.2653971	2.1693883	2.1693883	
24:56.4	574271	6.35303E+12	5.6095E+13	5356.83	0.0197454	0.0083666	0.0712807	0.6109227	0.2588626	2.1723438	2.1723438	
29:59.3	574271	6.35303E+12	5.6095E+13	5351.83	0.0197454	0.0082673	0.0712142	0.6109227	0.2557903	2.1703161	2.1703161	
35:02.8	574272	6.35303E+12	5.54087E+13	5355.01	0.0197454	0.0084139	0.0721391	0.6109227	0.2603261	2.1985034	2.1985034	
40:06.4	574273	6.35303E+12	5.53104E+13	5355.83	0.0197454	0.0088342	0.0722783	0.6109227	0.2733301	2.2027469	2.2027469	
45:09.3	574274	6.35303E+12	5.53441E+13	5354.54	0.0197454	0.0108837	0.072217	0.6109227	0.3367417	2.2008772	2.2008772	
50:12.2	574274	6.35303E+12	5.53441E+13	5352.64	0.0197454	0.0122486	0.0721913	0.6109227	0.3789717	2.2000962	2.2000962	
55:15.6	574274	6.35303E+12	5.53441E+13	5355.99	0.0197454	0.0149968	0.0722365	0.6109227	0.464001	2.2014732	2.2014732	
00:19.1	574274	6.35303E+12	5.53441E+13	5375.12	0.0222325	0.0101231	0.0724945	0.6878735	0.3132087	2.2093362	2.2093362	
05:21.9	574274	6.35303E+12	5.53441E+13	5371.63	0.0222325	0.0092988	0.0724475	0.6878735	0.2877049	2.2079017	2.2079017	
10:25.1	574274	6.35303E+12	5.53441E+13	5367.35	0.0222325	0.0159435	0.0723897	0.6878735	0.4932919	2.2061425	2.2061425	
15:27.9	574274	6.35303E+12	5.53441E+13	5362.88	0.0222325	0.0163429	0.0723295	0.6878735	0.5056493	2.2043052	2.2043052	
20:30.7	574275	6.35303E+12	5.36343E+13	5367	0.0222325	0.0162985	0.0746925	0.6878735	0.5042756	2.2763203	2.2763203	
25:33.4	574275	6.35303E+12	5.36343E+13	5371.56	0.0222325	0.0160846	0.0747559	0.6878735	0.4976575	2.2782544	2.2782544	
30:36.1	574276	6.35303E+12	5.309E+13	5370.52	0.0222325	0.0202582	0.0755079	0.6878735	0.6267887	2.3011697	2.3011697	
35:39.0	574278	6.35303E+12	5.49235E+13	5373.23	0.0222325	0.0194913	0.0730239	0.6878735	0.6030608	2.2254696	2.2254696	
40:41.9	574281	6.35303E+12	5.67946E+13	5385.74	0.0222325	0.0175595	0.0707827	0.6878735	0.5432909	2.1571652	2.1571652	
45:45.1	574281	6.35303E+12	5.67946E+13	5380.67	0.0222325	0.0174214	0.070716	0.6878735	0.5390181	2.1551345	2.1551345	
50:48.4	574281	6.35303E+12	5.67946E+13	5377.85	0.0222325	0.0137409	0.070679	0.6878735	0.4251434	2.154005	2.154005	
55:51.4	574282	6.35303E+12	5.6096E+13	5376.85	0.0222325	0.0182958	0.0715459	0.6878735	0.5660721	2.1804251	2.1804251	
00:54.6	574282	6.35303E+12	5.6096E+13	5379.99	0.0242054	0.0181581	0.0715877	0.7489151	0.5618116	2.1816984	2.1816984	
05:57.8	574283	6.35303E+12	5.56063E+13	5400.03	0.0242054	0.0202376	0.0724871	0.7489151	0.6261513	2.2091081	2.2091081	
11:00.8	574283	6.35303E+12	5.56063E+13	5401.02	0.0242054	0.0201139	0.0725003	0.7489151	0.6223241	2.2095131	2.2095131	
16:04.4	574283	6.35303E+12	5.56063E+13	5410.51	0.0242054	0.0214443	0.0726277	0.7489151	0.6634866	2.2133954	2.2133954	
21:08.0	574284	6.35303E+12	5.64188E+13	5401.01	0.0242054	0.0210331	0.0714561	0.7489151	0.6507641	2.17769	2.17769	
26:11.4	574284	6.35303E+12	5.64188E+13	5401.31	0.0242054	0.0205184	0.0714601	0.7489151	0.6348393	2.1778109	2.1778109	
31:14.5	574285	6.35303E+12	5.57835E+13	5409.35	0.0242054	0.0209267	0.0723816	0.7489151	0.6474721	2.2058933	2.2058933	
36:17.4	574285	6.35303E+12	5.57835E+13	5396.6	0.0242054	0.0200056	0.072211	0.7489151	0.6189733	2.2006939	2.2006939	
41:20.3	574285	6.35303E+12	5.57835E+13	5405.56	0.0242054	0.0208363	0.0723309	0.7489151	0.6446751	2.2043478	2.2043478	
46:23.1	574285	6.35303E+12	5.57835E+13	5401.1	0.0242054	0.020561	0.0722712	0.7489151	0.6361573	2.202529	2.202529	
51:26.0	574285	6.35303E+12	5.57835E+13	5400.14	0.0242054	0.0208137	0.0722583	0.7489151	0.6439759	2.2021375	2.2021375	
56:29.0	574285	6.35303E+12	5.57835E+13	5401.59	0.0242054	0.020787	0.0722777	0.7489151	0.6431498	2.2027288	2.2027288	
01:32.2	574285	6.35303E+12	5.57835E+13	5405.56	0.0252561	0.020855	0.0723309	0.7814237	0.6452537	2.2043478	2.2043478	
06:35.5	574285	6.35303E+12	5.57835E+13	5409.65	0.0252561	0.0210312	0.0723856	0.7814237	0.6507053	2.2060156	2.2060156	
11:38.4	574286	6.35303E+12	5.36818E+13	5410.84	0.0252561	0.0209883	0.075236	0.7814237	0.649378	2.2928844	2.2928844	
16:41.6	574287	6.35303E+12	5.50908E+13	5403.01	0.0252561	0.0209925	0.0732057	0.7814237	0.649508	2.2310097	2.2310097	
21:44.7	574288	6.35303E+12	5.6446E+13	5380.86	0.0252561	0.0210373	0.0711552	0.7814237	0.6508941	2.1685188	2.1685188	
26:47.7	574288	6.35303E+12	5.6446E+13	5384.99	0.0252561	0.0210425	0.0712098	0.7814237	0.651055	2.1701832	2.1701832	
31:50.7	574289	6.35303E+12	5.61643E+13	5388.52	0.0252561	0.022109	0.071614	0.7814237	0.6840525	2.1824996	2.1824996	
36:53.9	574289	6.35303E+12	5.61643E+13	5385.01	0.0252561	0.0221868	0.0715673	0.7814237	0.6864596	2.1810779	2.1810779	
41:57.0	574289	6.35303E+12	5.61643E+13	5382.53	0.0252561	0.0216043	0.0715343	0.7814237	0.668437	2.1800735	2.1800735	
47:00.1	574289	6.35303E+12	5.61643E+13	5379.16	0.0252561	0.0221915	0.0714896	0.7814237	0.686605	2.1787085	2.1787085	
52:03.4	574292	6.35303E+12	5.59818E+13	5379.99	0.0252561	0.0222715	0.0717336	0.7814237	0.6890802	2.1861462	2.1861462	
57:06.3	574293	6.35303E+12	5.63654E+13	5381.68	0.0252561	0.0222386	0.0712679	0.7814237	0.6880623	2.1719525	2.1719525	
02:09.5	574294	6.35303E+12	5.66874E+13	5378.04	0.0264225	0.0216911	0.0708151	0.8175122	0.6711226	2.1581537	2.1581537	

07:12.4	574295	6.35303E+12	5.71185E+13	5388.44	0.0264225	0.0218905	0.0704165	0.8175122	0.6772921	2.1460054	2.1460054
12:15.4	574296	6.35303E+12	5.69506E+13	5391.26	0.0264225	0.0220556	0.070661	0.8175122	0.6824003	2.1534583	2.1534583
17:18.3	574298	6.35303E+12	5.77593E+13	5388.44	0.0264225	0.0244837	0.0696352	0.8175122	0.7575257	2.1221966	2.1221966
22:21.3	574298	6.35303E+12	5.77593E+13	5392.01	0.0264225	0.0226768	0.0696814	0.8175122	0.7016202	2.1236027	2.1236027
27:24.6	574298	6.35303E+12	5.77593E+13	5397.27	0.0264225	0.0261908	0.0697494	0.8175122	0.8103434	2.1256743	2.1256743
32:27.7	574300	6.35303E+12	5.74492E+13	5392.2	0.0264225	0.0269438	0.07006	0.8175122	0.8336412	2.1351406	2.1351406
37:31.8	574301	6.35303E+12	5.7613E+13	5391.27	0.0264225	0.0860346	0.0698488	0.8175122	2.6619105	2.1287047	2.6619105
42:35.9	574301	6.35303E+12	5.7613E+13	5391.55	0.0264225	0.2246863	0.0698524	0.8175122	6.9517941	2.1288153	6.9517941
47:40.3	574302	6.35303E+12	5.77583E+13	5397.52	0.0264225	0.1597185	0.0697538	0.8175122	4.9416904	2.1258102	4.9416904
52:44.3	574302	6.35303E+12	5.77583E+13	5396.44	0.0264225	0.1817049	0.0697399	0.8175122	5.6219496	2.1253849	5.6219496
57:48.1	574305	6.35303E+12	5.8471E+13	5390.94	0.0264225	0.1794976	0.0688196	0.8175122	5.5536557	2.097339	5.5536557
02:52.0	574305	6.35303E+12	5.8471E+13	5391.58	0.0287826	0.2238323	0.0688278	0.8905336	6.9253714	2.097588	6.9253714
07:55.1	574305	6.35303E+12	5.8471E+13	5393.02	0.0287826	0.0385992	0.0688461	0.8905336	1.1942592	2.0981483	2.0981483
12:58.1	574306	6.35303E+12	5.85526E+13	5393.03	0.0287826	0.0287708	0.0687504	0.8905336	0.8901686	2.0952297	2.0952297
18:01.0	574309	6.35303E+12	6.00748E+13	5395.99	0.0287826	0.0257429	0.0670451	0.8905336	0.7964853	2.0432598	2.0432598
23:03.8	574309	6.35303E+12	6.00748E+13	5395.98	0.0287826	0.02657	0.067045	0.8905336	0.8220758	2.043256	2.043256
28:06.6	574310	6.35303E+12	6.02983E+13	5397.49	0.0287826	0.0264104	0.0668152	0.8905336	0.8171378	2.0362532	2.0362532
33:09.8	574311	6.35303E+12	6.01255E+13	5398.95	0.0287826	0.0307645	0.0670253	0.8905336	0.9518536	2.0426553	2.0426553
38:13.1	574312	6.35303E+12	5.99055E+13	5397.51	0.0287826	0.0307598	0.0672535	0.8905336	0.9517082	2.0496101	2.0496101
43:15.9	574312	6.35303E+12	5.99055E+13	5396.26	0.0287826	0.0308105	0.0672379	0.8905336	0.9532769	2.0491354	2.0491354
48:18.6	574314	6.35303E+12	5.98595E+13	5395.6	0.0287826	0.0265074	0.0672813	0.8905336	0.820139	2.0504592	2.0504592
53:21.7	574315	6.35303E+12	5.97623E+13	5391.83	0.0287826	0.029322	0.0673437	0.8905336	0.9072227	2.0523603	2.0523603
58:24.3	574315	6.35303E+12	5.97623E+13	5389.24	0.0287826	0.0267833	0.0673114	0.8905336	0.8286753	2.0513744	2.0513744
03:28.3	574317	6.35303E+12	6.04051E+13	5387.74	0.0305043	0.2178286	0.0665766	0.943803	6.7396169	2.0289816	6.7396169
08:31.2	574317	6.35303E+12	6.04051E+13	5389.07	0.0305043	0.0280361	0.066593	0.943803	0.8674369	2.0294825	2.0294825
13:35.6	574320	6.35303E+12	6.21737E+13	5394.18	0.0305043	0.231619	0.06476	0.943803	7.1662919	1.9736205	7.1662919
18:38.5	574320	6.35303E+12	6.21737E+13	5398.38	0.0305043	0.0502744	0.0648105	0.943803	1.5554899	1.9751572	1.9751572
23:41.4	574320	6.35303E+12	6.21737E+13	5403.1	0.0305043	0.0382162	0.0648671	0.943803	1.1824092	1.9768841	1.9768841
28:44.2	574320	6.35303E+12	6.21737E+13	5406.31	0.0305043	0.0313252	0.0649057	0.943803	0.9692017	1.9780586	1.9780586
33:47.2	574321	6.35303E+12	6.17749E+13	5402.68	0.0305043	0.0288967	0.0652808	0.943803	0.8940639	1.989492	1.989492
38:49.7	574321	6.35303E+12	6.17749E+13	5407.64	0.0305043	0.0287713	0.0653408	0.943803	0.890184	1.9913185	1.9913185
43:52.5	574321	6.35303E+12	6.17749E+13	5407.6	0.0305043	0.0282878	0.0653403	0.943803	0.8752245	1.9913038	1.9913038
48:55.3	574321	6.35303E+12	6.17749E+13	5409.48	0.0305043	0.0284715	0.065363	0.943803	0.8809082	1.9919961	1.9919961
53:58.0	574321	6.35303E+12	6.17749E+13	5414.01	0.0305043	0.0284908	0.0654177	0.943803	0.8815054	1.9936642	1.9936642
59:00.7	574321	6.35303E+12	6.17749E+13	5398.73	0.0305043	0.0273469	0.0652331	0.943803	0.8461131	1.9880375	1.9880375
04:04.0	574321	6.35303E+12	6.17749E+13	5392.99	0.0297972	0.0273754	0.0651637	0.9219254	0.8469949	1.9859238	1.9859238
09:06.9	574321	6.35303E+12	6.17749E+13	5391.48	0.0297972	0.0274988	0.0651455	0.9219254	0.8508129	1.9853677	1.9853677
14:10.1	574321	6.35303E+12	6.17749E+13	5395.84	0.0297972	0.0272488	0.0651982	0.9219254	0.8430779	1.9869732	1.9869732
19:13.1	574321	6.35303E+12	6.17749E+13	5394.88	0.0297972	0.0273184	0.0651866	0.9219254	0.8452313	1.9866197	1.9866197
24:16.0	574321	6.35303E+12	6.17749E+13	5394.01	0.0297972	0.0274422	0.0651761	0.9219254	0.8490617	1.9862994	1.9862994
29:18.8	574321	6.35303E+12	6.17749E+13	5393.45	0.0297972	0.0273455	0.0651693	0.9219254	0.8460698	1.9860931	1.9860931
34:22.0	574322	6.35303E+12	5.8824E+13	5392.88	0.0297972	0.0272903	0.0684313	0.9219254	0.8443619	2.0855052	2.0855052
39:25.3	574322	6.35303E+12	5.8824E+13	5394.38	0.0297972	0.0265887	0.0684503	0.9219254	0.8226544	2.0860853	2.0860853
44:28.3	574323	6.35303E+12	5.85421E+13	5392.66	0.0297972	0.027943	0.068758	0.9219254	0.8645564	2.0954606	2.0954606
49:31.3	574323	6.35303E+12	5.85421E+13	5399.52	0.0297972	0.0271998	0.0688454	0.9219254	0.8415618	2.0981263	2.0981263
54:34.1	574324	6.35303E+12	5.81584E+13	5403.19	0.0297972	0.0281051	0.0693467	0.9219254	0.8695718	2.1134037	2.1134037
59:37.0	574326	6.35303E+12	5.98016E+13	5404.52	0.0297972	0.0309303	0.0674579	0.9219254	0.9569835	2.055839	2.055839

04:39.8	574326	6.35303E+12	5.98016E+13	5400.73	0.0307976	0.0366302	0.0674106	0.9528777	1.1333384	2.0543973	2.0543973
14:45.4	574327	6.35303E+12	5.96067E+13	5402.51	0.0307976	0.0281076	0.0676532	0.9528777	0.8696491	2.0617928	2.0617928
19:48.1	574328	6.35303E+12	5.96752E+13	5405.01	0.0307976	0.0263111	0.0676069	0.9528777	0.8140654	2.0603812	2.0603812
24:52.0	574328	6.35303E+12	5.96752E+13	5405.56	0.0307976	0.0278043	0.0676138	0.9528777	0.860265	2.0605909	2.0605909
29:55.2	574328	6.35303E+12	5.96752E+13	5413.98	0.0307976	0.0275948	0.0677191	0.9528777	0.8537831	2.0638005	2.0638005
34:58.7	574329	6.35303E+12	5.94855E+13	5414.16	0.0307976	0.0277464	0.0679373	0.9528777	0.8584736	2.0704516	2.0704516
40:01.7	574330	6.35303E+12	5.97035E+13	5414.01	0.0307976	0.0277264	0.0676874	0.9528777	0.8578548	2.0628341	2.0628341
50:08.1	574333	6.35303E+12	5.9734E+13	5408.31	0.0307976	0.0275529	0.0675816	0.9528777	0.8524867	2.0596102	2.0596102
55:11.1	574333	6.35303E+12	5.9734E+13	5400.01	0.0307976	0.0275835	0.0674779	0.9528777	0.8534335	2.0564494	2.0564494
00:14.4	574334	6.35303E+12	5.92562E+13	5403.11	0.0296508	0.0278574	0.068061	0.9173958	0.861908	2.0742213	2.0742213
05:17.4	574335	6.35303E+12	5.9018E+13	5400.72	0.0296508	0.0288549	0.0683055	0.9173958	0.8927706	2.0816708	2.0816708
10:20.4	574337	6.35303E+12	6.04407E+13	5401.43	0.0296508	0.0276696	0.0667064	0.9173958	0.8560974	2.0329364	2.0329364
15:23.6	574337	6.35303E+12	6.04407E+13	5403.84	0.0296508	0.0274339	0.0667361	0.9173958	0.8488049	2.0338434	2.0338434
20:26.4	574340	6.35303E+12	6.01388E+13	5404.02	0.0296508	0.0269979	0.0670734	0.9173958	0.835315	2.044123	2.044123
25:29.5	574342	6.35303E+12	6.0482E+13	5407.99	0.0296508	0.0274831	0.0667418	0.9173958	0.8503271	2.0340152	2.0340152
30:32.3	574342	6.35303E+12	6.0482E+13	5405.55	0.0296508	0.0264784	0.0667116	0.9173958	0.8192417	2.0330975	2.0330975
35:35.1	574343	6.35303E+12	5.99395E+13	5400.01	0.0296508	0.0271096	0.0672465	0.9173958	0.838771	2.0493965	2.0493965
40:37.9	574343	6.35303E+12	5.99395E+13	5399.02	0.0296508	0.0269728	0.0672341	0.9173958	0.8345384	2.0490207	2.0490207
50:43.2	574344	6.35303E+12	5.95861E+13	5394.85	0.0296508	0.0269754	0.0675807	0.9173958	0.8346189	2.0595816	2.0595816
55:45.9	574344	6.35303E+12	5.95861E+13	5398.35	0.0296508	0.027175	0.0676245	0.9173958	0.8407945	2.0609177	2.0609177
00:50.4	574345	6.35303E+12	5.83668E+13	5398.44	0.0287107	0.2314886	0.0690384	0.8883091	7.1622573	2.1040074	7.1622573
05:53.3	574346	6.35303E+12	5.84022E+13	5394.51	0.0287107	0.0273792	0.0689463	0.8883091	0.8471124	2.1012014	2.1012014
10:57.2	574347	6.35303E+12	5.86008E+13	5396.65	0.0287107	0.0274463	0.0687399	0.8883091	0.8491885	2.0949115	2.0949115
16:00.2	574347	6.35303E+12	5.86008E+13	5399.98	0.0287107	0.0276066	0.0687824	0.8883091	0.8541482	2.0962041	2.0962041
21:03.3	574348	6.35303E+12	5.87322E+13	5397.6	0.0287107	0.0272933	0.0685982	0.8883091	0.8444547	2.0905929	2.0905929
26:08.2	574348	6.35303E+12	5.87322E+13	5396.94	0.0287107	0.2304047	0.0685898	0.8883091	7.1287214	2.0903373	7.1287214
31:11.2	574349	6.35303E+12	5.84595E+13	5395.06	0.0287107	0.0373191	0.0688857	0.8883091	1.154653	2.0993542	2.0993542
36:14.1	574350	6.35303E+12	5.91267E+13	5395.1	0.0287107	0.0277184	0.0681089	0.8883091	0.8576073	2.0756815	2.0756815
41:17.0	574350	6.35303E+12	5.91267E+13	5395.85	0.0287107	0.0254041	0.0681184	0.8883091	0.7860029	2.0759701	2.0759701
46:19.8	574351	6.35303E+12	5.92508E+13	5395.02	0.0287107	0.0261363	0.0679653	0.8883091	0.8086571	2.071303	2.071303
51:22.9	574351	6.35303E+12	5.92508E+13	5393.06	0.0287107	0.0253255	0.0679406	0.8883091	0.783571	2.0705505	2.0705505
01:28.4	574351	6.35303E+12	5.92508E+13	5390.01	0.0299929	0.02562	0.0679022	0.9279803	0.7926828	2.0693795	2.0693795
06:31.2	574351	6.35303E+12	5.92508E+13	5374.44	0.0299929	0.0230599	0.067706	0.9279803	0.7134733	2.0634017	2.0634017
11:34.1	574351	6.35303E+12	5.92508E+13	5371.81	0.0299929	0.0231322	0.0676729	0.9279803	0.7157103	2.062392	2.062392
16:37.1	574352	6.35303E+12	5.79249E+13	5372.6	0.0299929	0.0247667	0.0692321	0.9279803	0.7662817	2.1099115	2.1099115
26:42.4	574353	6.35303E+12	5.95341E+13	5384.99	0.0299929	0.0253659	0.0675161	0.9279803	0.7848209	2.0576131	2.0576131
31:45.3	574353	6.35303E+12	5.95341E+13	5393.61	0.0299929	0.025794	0.0676241	0.9279803	0.7980664	2.0609068	2.0609068
41:50.8	574353	6.35303E+12	5.95341E+13	5401.49	0.0299929	0.0254275	0.0677229	0.9279803	0.7867268	2.0639177	2.0639177
46:53.9	574356	6.35303E+12	6.01278E+13	5393.39	0.0299929	0.023825	0.0669538	0.9279803	0.7371455	2.0404768	2.0404768
51:57.5	574356	6.35303E+12	6.01278E+13	5401.9	0.0299929	0.0253189	0.0670594	0.9279803	0.7833668	2.0436963	2.0436963
57:00.7	574357	6.35303E+12	5.98782E+13	5404.01	0.0299929	0.0224156	0.0673653	0.9279803	0.6935387	2.0530169	2.0530169
02:03.8	574357	6.35303E+12	5.98782E+13	5410.44	0.036492	0.0222551	0.0674454	1.1290625	0.6885728	2.0554597	2.0554597
07:07.6	574357	6.35303E+12	5.98782E+13	5413.48	0.036492	0.0220381	0.0674833	1.1290625	0.6818588	2.0566147	2.0566147
12:11.1	574359	6.35303E+12	5.99023E+13	5412.99	0.036492	0.0222681	0.0674501	1.1290625	0.688975	2.0556012	2.0556012
17:14.5	574360	6.35303E+12	6.0023E+13	5413.64	0.036492	0.0223594	0.0673224	1.1290625	0.6917998	2.0517109	2.0517109
22:17.6	574360	6.35303E+12	6.0023E+13	5409.57	0.036492	0.0232117	0.0672718	1.1290625	0.71817	2.0501684	2.0501684
27:20.8	574360	6.35303E+12	6.0023E+13	5403.2	0.036492	0.022951	0.0671926	1.1290625	0.7101039	2.0477543	2.0477543

32:24.8	574361	6.35303E+12	5.95038E+13	5409.65	0.036492	0.0250046	0.0678598	1.1290625	0.7736423	2.068088	2.068088
37:27.9	574361	6.35303E+12	5.95038E+13	5414.99	0.036492	0.0365942	0.0679268	1.1290625	1.1322245	2.0701294	2.0701294
42:31.0	574362	6.35303E+12	5.87448E+13	5422.88	0.036492	0.0243161	0.0689047	1.1290625	0.7523401	2.0999322	2.0999322
47:34.5	574362	6.35303E+12	5.87448E+13	5432.58	0.036492	0.0229003	0.0690279	1.1290625	0.7085353	2.1036884	2.1036884
52:37.7	574362	6.35303E+12	5.87448E+13	5428.01	0.036492	0.0245215	0.0689699	1.1290625	0.7586952	2.1019188	2.1019188
57:42.1	574363	6.35303E+12	5.80502E+13	5427.15	0.036492	0.0332235	0.0697841	1.1290625	1.0279351	2.1267343	2.1267343
02:45.1	574364	6.35303E+12	5.78645E+13	5427.23	0.0274366	0.0490236	0.0700091	0.8488884	1.5167902	2.1335902	2.1335902
07:48.2	574364	6.35303E+12	5.78645E+13	5441.99	0.0274366	0.0440935	0.0701995	0.8488884	1.3642529	2.1393928	2.1393928
12:51.1	574365	6.35303E+12	5.73396E+13	5428.97	0.0274366	0.0247736	0.0706726	0.8488884	0.7664952	2.1538115	2.1538115
17:54.2	574367	6.35303E+12	5.84533E+13	5439.06	0.0274366	0.0251483	0.069455	0.8488884	0.7780884	2.1167024	2.1167024
22:58.5	574367	6.35303E+12	5.84533E+13	5434.48	0.0274366	0.0235975	0.0693965	0.8488884	0.7301067	2.1149201	2.1149201
28:01.7	574368	6.35303E+12	5.81378E+13	5438.3	0.0274366	0.0218651	0.0698221	0.8488884	0.6765062	2.1278923	2.1278923
33:04.7	574368	6.35303E+12	5.81378E+13	5439.66	0.0274366	0.0215412	0.0698396	0.8488884	0.6664847	2.1284244	2.1284244
38:08.0	574369	6.35303E+12	5.7527E+13	5442.57	0.0274366	0.021035	0.0706189	0.8488884	0.6508229	2.1521741	2.1521741
43:11.1	574370	6.35303E+12	5.73316E+13	5444.99	0.0274366	0.0203824	0.0708911	0.8488884	0.6306315	2.1604697	2.1604697
48:14.4	574370	6.35303E+12	5.73316E+13	5471.73	0.0274366	0.0203027	0.0712392	0.8488884	0.6281655	2.1710796	2.1710796
53:17.3	574370	6.35303E+12	5.73316E+13	5469.28	0.0274366	0.0199351	0.0712073	0.8488884	0.616792	2.1701075	2.1701075
58:21.3	574373	6.35303E+12	5.75391E+13	5468.81	0.0274366	0.0202047	0.0709444	0.8488884	0.6251334	2.1620944	2.1620944
03:24.3	574373	6.35303E+12	5.75391E+13	5471.06	0.0211425	0.0198863	0.0709736	0.654149	0.6152821	2.1629839	2.1629839
08:27.3	574374	6.35303E+12	5.70787E+13	5464.23	0.0211425	0.0196411	0.0714567	0.654149	0.6076956	2.177708	2.177708
13:30.2	574374	6.35303E+12	5.70787E+13	5456.01	0.0211425	0.0200366	0.0713492	0.654149	0.6199324	2.1744321	2.1744321
18:33.0	574375	6.35303E+12	5.67247E+13	5460.16	0.0211425	0.0197672	0.0718491	0.654149	0.6115972	2.1896661	2.1896661
23:35.9	574376	6.35303E+12	5.68162E+13	5459.27	0.0211425	0.0218005	0.0717217	0.654149	0.6745075	2.185782	2.185782
28:38.8	574376	6.35303E+12	5.68162E+13	5454.55	0.0211425	0.0198778	0.0716596	0.654149	0.6150191	2.1838922	2.1838922
33:41.8	574377	6.35303E+12	5.63276E+13	5458.01	0.0211425	0.0200894	0.0723272	0.654149	0.621566	2.2042367	2.2042367
38:44.5	574377	6.35303E+12	5.63276E+13	5466.4	0.0211425	0.0223136	0.0724384	0.654149	0.6903828	2.2076251	2.2076251
43:47.4	574377	6.35303E+12	5.63276E+13	5465.31	0.0211425	0.0216094	0.0724239	0.654149	0.6685948	2.2071849	2.2071849
53:53.8	574378	6.35303E+12	5.65074E+13	5467.7	0.0211425	0.0211707	0.072225	0.654149	0.6550215	2.2011227	2.2011227
58:56.5	574379	6.35303E+12	5.75462E+13	5464.7	0.0211425	0.0200281	0.0708824	0.654149	0.6196694	2.1602037	2.1602037
04:31.5	574384	6.35303E+12	5.65611E+13	5475.86	0.0182998	0.0190671	0.0722642	0.5661958	0.5899361	2.2023153	2.2023153
09:34.6	574384	6.35303E+12	5.65611E+13	5473.44	0.0182998	0.0190221	0.0722322	0.5661958	0.5885438	2.201342	2.201342
19:40.1	574384	6.35303E+12	5.65611E+13	5478.95	0.0182998	0.0187179	0.0723049	0.5661958	0.5791318	2.2035581	2.2035581
24:43.3	574384	6.35303E+12	5.65611E+13	5485.86	0.0182998	0.0185384	0.0723961	0.5661958	0.5735781	2.2063372	2.2063372
29:46.2	574385	6.35303E+12	5.52675E+13	5483.01	0.0182998	0.0181898	0.0740521	0.5661958	0.5627924	2.2568058	2.2568058
34:49.1	574386	6.35303E+12	5.5002E+13	5487.88	0.0182998	0.018495	0.0744757	0.5661958	0.5722353	2.2697143	2.2697143
39:52.0	574387	6.35303E+12	5.4816E+13	5489.7	0.0182998	0.0189422	0.0747532	0.5661958	0.5860717	2.278171	2.278171
44:54.7	574387	6.35303E+12	5.4816E+13	5485.01	0.0182998	0.0185212	0.0746893	0.5661958	0.5730459	2.2762247	2.2762247
49:57.6	574387	6.35303E+12	5.4816E+13	5494.4	0.0182998	0.0186646	0.0748172	0.5661958	0.5774827	2.2801215	2.2801215
55:00.6	574387	6.35303E+12	5.4816E+13	5492.41	0.0182998	0.0186275	0.0747901	0.5661958	0.5763349	2.2792957	2.2792957
00:04.1	574388	6.35303E+12	5.41076E+13	5491.83	0.0173139	0.018643	0.0757612	0.5356921	0.5768144	2.3088909	2.3088909
05:07.1	574388	6.35303E+12	5.41076E+13	5492.55	0.0173139	0.0186361	0.0757711	0.5356921	0.5766009	2.3091936	2.3091936
10:10.2	574388	6.35303E+12	5.41076E+13	5499.47	0.0173139	0.0186041	0.0758666	0.5356921	0.5756109	2.3121029	2.3121029
15:13.2	574390	6.35303E+12	5.36713E+13	5499.81	0.0173139	0.0185912	0.0764881	0.5356921	0.5752117	2.3310446	2.3310446
20:16.0	574393	6.35303E+12	5.4543E+13	5532.69	0.0173139	0.0190842	0.0757157	0.5356921	0.5904651	2.3075042	2.3075042
30:21.8	574393	6.35303E+12	5.4543E+13	5536.93	0.0173139	0.0198275	0.0757737	0.5356921	0.6134629	2.3092726	2.3092726
35:25.0	574393	6.35303E+12	5.4543E+13	5564.48	0.0173139	0.019795	0.0761508	0.5356921	0.6124573	2.3207628	2.3207628
40:28.0	574394	6.35303E+12	5.38779E+13	5538.44	0.0173139	0.020088	0.0767299	0.5356921	0.6215227	2.3384139	2.3384139

45:31.1	574395	6.35303E+12	5.53825E+13	5520.08	0.0173139	0.0197988	0.074398	0.5356921	0.6125749	2.2673468	2.2673468	
50:33.9	574395	6.35303E+12	5.53825E+13	5520.48	0.0173139	0.0198422	0.0744034	0.5356921	0.6139177	2.2675111	2.2675111	
55:36.8	574395	6.35303E+12	5.53825E+13	5515.98	0.0173139	0.0194883	0.0743428	0.5356921	0.602968	2.2656627	2.2656627	
00:39.8	574395	6.35303E+12	5.53825E+13	5518.69	0.0179626	0.019462	0.0743793	0.5557628	0.6021543	2.2667759	2.2667759	
05:43.2	574395	6.35303E+12	5.53825E+13	5531.68	0.0179626	0.0194192	0.0745544	0.5557628	0.60083	2.2721114	2.2721114	
10:46.2	574395	6.35303E+12	5.53825E+13	5530.89	0.0179626	0.0192349	0.0745437	0.5557628	0.5951278	2.2717869	2.2717869	
15:49.8	574396	6.35303E+12	5.44713E+13	5541.2	0.0179626	0.0191897	0.075932	0.5557628	0.5937293	2.3140947	2.3140947	
20:52.7	574396	6.35303E+12	5.44713E+13	5544.69	0.0179626	0.0191963	0.0759798	0.5557628	0.5939335	2.3155521	2.3155521	
25:55.6	574396	6.35303E+12	5.44713E+13	5552.98	0.0179626	0.0192925	0.0760934	0.5557628	0.59691	2.3190142	2.3190142	
30:58.6	574397	6.35303E+12	5.38389E+13	5536.99	0.0179626	0.0189288	0.0767654	0.5557628	0.5856571	2.3394943	2.3394943	
36:02.2	574397	6.35303E+12	5.38389E+13	5549.99	0.0179626	0.0191736	0.0769456	0.5557628	0.5932312	2.3449871	2.3449871	
41:05.2	574397	6.35303E+12	5.38389E+13	5578.73	0.0179626	0.019072	0.0773441	0.5557628	0.5900877	2.3571303	2.3571303	
46:08.4	574397	6.35303E+12	5.38389E+13	5587.27	0.0179626	0.0191605	0.0774625	0.5557628	0.5928259	2.3607386	2.3607386	
51:11.5	574397	6.35303E+12	5.38389E+13	5577.62	0.0179626	0.019671	0.0773287	0.5557628	0.6086207	2.3566613	2.3566613	
56:14.6	574397	6.35303E+12	5.38389E+13	5578.43	0.0179626	0.019726	0.0773399	0.5557628	0.6103224	2.3570036	2.3570036	
01:18.0	574398	6.35303E+12	5.24135E+13	5585.77	0.0181708	0.020031	0.0795478	0.5622046	0.6197591	2.42429	2.42429	
06:21.5	574399	6.35303E+12	5.22154E+13	5570.36	0.0181708	0.0201913	0.0796293	0.5622046	0.6247188	2.4267736	2.4267736	
11:24.3	574400	6.35303E+12	5.19602E+13	5563.2	0.0181708	0.0200017	0.0799175	0.5622046	0.6188526	2.4355582	2.4355582	
16:27.3	574400	6.35303E+12	5.19602E+13	5579.23	0.0181708	0.0200965	0.0801478	0.5622046	0.6217857	2.4425761	2.4425761	
21:30.3	574400	6.35303E+12	5.19602E+13	5571.91	0.0181708	0.0200908	0.0800426	0.5622046	0.6216094	2.4393714	2.4393714	
26:33.2	574401	6.35303E+12	5.14241E+13	5570.27	0.0181708	0.0202515	0.0808533	0.5622046	0.6265814	2.4640783	2.4640783	
31:36.5	574402	6.35303E+12	5.15991E+13	5562.53	0.0181708	0.0202163	0.0804671	0.5622046	0.6254923	2.4523071	2.4523071	
36:39.4	574402	6.35303E+12	5.15991E+13	5598.28	0.0181708	0.0209438	0.0809843	0.5622046	0.6480012	2.4680679	2.4680679	
41:42.1	574404	6.35303E+12	5.22163E+13	5622.51	0.0181708	0.0204391	0.0803735	0.5622046	0.6323858	2.4494541	2.4494541	
46:45.3	574405	6.35303E+12	5.26766E+13	5610.46	0.0181708	0.022443	0.0795004	0.5622046	0.6943864	2.4228448	2.4228448	
51:48.2	574406	6.35303E+12	5.44332E+13	5697.34	0.0181708	0.0205015	0.0781261	0.5622046	0.6343164	2.3809636	2.3809636	
56:50.9	574407	6.35303E+12	5.44179E+13	5660.07	0.0181708	0.020423	0.077637	0.5622046	0.6318876	2.3660567	2.3660567	
06:56.4	574408	6.35303E+12	5.43366E+13	5661.93	0.0189944	0.0199466	0.0777787	0.5876867	0.6171478	2.3703744	2.3703744	
11:59.9	574409	6.35303E+12	5.45039E+13	5688.4	0.0189944	0.0202274	0.0779024	0.5876867	0.6258358	2.3741451	2.3741451	
17:03.3	574409	6.35303E+12	5.45039E+13	5705.82	0.0189944	0.0204858	0.0781409	0.5876867	0.6338307	2.3814156	2.3814156	
22:06.7	574409	6.35303E+12	5.45039E+13	5684.26	0.0189944	0.0228673	0.0778457	0.5876867	0.7075143	2.3724172	2.3724172	
27:09.6	574410	6.35303E+12	5.4739E+13	5675.94	0.0189944	0.0210179	0.0773979	0.5876867	0.6502938	2.3587711	2.3587711	
32:12.9	574410	6.35303E+12	5.4739E+13	5704.8	0.0189944	0.0219318	0.0777915	0.5876867	0.6785699	2.3707646	2.3707646	
37:15.9	574410	6.35303E+12	5.4739E+13	5701.98	0.0189944	0.0220176	0.077753	0.5876867	0.6812245	2.3695926	2.3695926	
42:18.6	574410	6.35303E+12	5.4739E+13	5732.34	0.0189944	0.0217753	0.078167	0.5876867	0.6737278	2.3822095	2.3822095	
47:21.8	574410	6.35303E+12	5.4739E+13	5753.01	0.0189944	0.0233293	0.0784489	0.5876867	0.7218085	2.3907994	2.3907994	
52:25.1	574410	6.35303E+12	5.4739E+13	5756.81	0.0189944	0.0238745	0.0785007	0.5876867	0.738677	2.3923786	2.3923786	
57:27.9	574412	6.35303E+12	5.33495E+13	5791.51	0.0189944	0.0451717	0.0810308	0.5876867	1.3976124	2.4694857	2.4694857	
02:31.0	574412	6.35303E+12	5.33495E+13	5778.34	0.0239869	0.0254874	0.0808465	0.7421547	0.7885802	2.46387	2.46387	
07:34.0	574412	6.35303E+12	5.33495E+13	5695.4	0.0239869	0.0228529	0.0796861	0.7421547	0.7070687	2.4285046	2.4285046	
12:36.8	574412	6.35303E+12	5.33495E+13	5717.23	0.0239869	0.0236822	0.0799915	0.7421547	0.7327273	2.4378128	2.4378128	
22:41.7	574413	6.35303E+12	5.25253E+13	5730.11	0.0239869	0.0225552	0.0814296	0.7421547	0.6978579	2.4816407	2.4816407	
27:44.8	574413	6.35303E+12	5.25253E+13	5715.55	0.0239869	0.0259265	0.0812227	0.7421547	0.8021659	2.475335	2.475335	
32:47.7	574414	6.35303E+12	5.19701E+13	5734.99	0.0239869	0.025733	0.0823697	0.7421547	0.796179	2.5102894	2.5102894	
37:50.9	574414	6.35303E+12	5.19701E+13	5743.05	0.0239869	0.0260107	0.0824854	0.7421547	0.8047711	2.5138174	2.5138174	
42:53.7	574416	6.35303E+12	5.19215E+13	5725.93	0.0239869	0.0259129	0.0823165	0.7421547	0.8017451	2.5086707	2.5086707	
47:56.5	574419	6.35303E+12	5.263E+13	5733.81	0.0239869	0.0228376	0.0813201	0.7421547	0.7065953	2.4783037	2.4783037	

52:59.1	574420	6.35303E+12	5.25895E+13	5702.24	0.0239869	0.0369356	0.0809348	0.7421547	1.1427875	2.4665598	2.4665598	
58:01.8	574421	6.35303E+12	5.25734E+13	5674.41	0.0239869	0.0239106	0.0805643	0.7421547	0.739794	2.4552707	2.4552707	
03:04.8	574422	6.35303E+12	5.2543E+13	5686.55	0.0273845	0.0222843	0.0807834	0.8472764	0.6894762	2.4619458	2.4619458	
08:08.0	574424	6.35303E+12	5.28202E+13	5686.98	0.0273845	0.022201	0.0803655	0.8472764	0.6868989	2.4492125	2.4492125	
13:10.8	574424	6.35303E+12	5.28202E+13	5696.24	0.0273845	0.0222756	0.0804964	0.8472764	0.6892071	2.4532005	2.4532005	
18:13.9	574424	6.35303E+12	5.28202E+13	5678.52	0.0273845	0.0287661	0.080246	0.8472764	0.8900231	2.445569	2.445569	
23:16.6	574426	6.35303E+12	5.30049E+13	5680.01	0.0273845	0.0495148	0.0799874	0.8472764	1.5319879	2.4376872	2.4376872	
28:20.7	574427	6.35303E+12	5.28466E+13	5679.28	0.0273845	0.2410973	0.0802166	0.8472764	7.4595505	2.4446732	7.4595505	
33:24.6	574427	6.35303E+12	5.28466E+13	5698.99	0.0273845	0.2334656	0.080495	0.8472764	7.2234257	2.4531574	7.2234257	
38:27.3	574427	6.35303E+12	5.28466E+13	5702.85	0.0273845	0.0497981	0.0805495	0.8472764	1.5407532	2.454819	2.454819	
43:30.1	574428	6.35303E+12	5.2354E+13	5722.4	0.0273845	0.0284052	0.0815862	0.8472764	0.8788569	2.4864117	2.4864117	
48:33.4	574428	6.35303E+12	5.2354E+13	5723.27	0.0273845	0.0286907	0.0815986	0.8472764	0.8876903	2.4867897	2.4867897	
53:36.4	574428	6.35303E+12	5.2354E+13	5711.78	0.0273845	0.0289323	0.0814347	0.8472764	0.8951654	2.4817972	2.4817972	
58:39.1	574429	6.35303E+12	5.15634E+13	5700.85	0.0273845	0.0244206	0.0825252	0.8472764	0.7555734	2.5150298	2.5150298	
03:41.9	574429	6.35303E+12	5.15634E+13	5699.99	0.0280847	0.022925	0.0825128	0.8689406	0.7092995	2.5146504	2.5146504	
08:44.7	574429	6.35303E+12	5.15634E+13	5715.88	0.0280847	0.0237192	0.0827428	0.8689406	0.733872	2.5216605	2.5216605	
13:47.4	574430	6.35303E+12	5.12815E+13	5716.7	0.0280847	0.0238876	0.0832095	0.8689406	0.7390823	2.5358831	2.5358831	
18:50.2	574430	6.35303E+12	5.12815E+13	5707.94	0.0280847	0.0242522	0.0830819	0.8689406	0.7503631	2.5319972	2.5319972	
23:53.1	574430	6.35303E+12	5.12815E+13	5728.45	0.0280847	0.024234	0.0833805	0.8689406	0.7498	2.5410953	2.5410953	
28:55.9	574430	6.35303E+12	5.12815E+13	5736.02	0.0280847	0.0243241	0.0834907	0.8689406	0.7525877	2.5444533	2.5444533	
33:59.1	574430	6.35303E+12	5.12815E+13	5740.86	0.0280847	0.0252158	0.0835611	0.8689406	0.7801769	2.5466002	2.5466002	
44:04.4	574430	6.35303E+12	5.12815E+13	5732.1	0.0280847	0.0252418	0.0834336	0.8689406	0.7809813	2.5427144	2.5427144	
49:07.5	574431	6.35303E+12	4.97074E+13	5725.7	0.0280847	0.0487379	0.0859796	0.8689406	1.5079506	2.6203068	2.6203068	
54:10.5	574432	6.35303E+12	4.99455E+13	5720.02	0.0280847	0.0292058	0.0854849	0.8689406	0.9036275	2.6052295	2.6052295	
59:14.1	574432	6.35303E+12	4.99455E+13	5706.01	0.0280847	0.0484988	0.0852755	0.8689406	1.5005529	2.5988485	2.5988485	
04:17.2	574433	6.35303E+12	4.98413E+13	5720.99	0.02809	0.0273041	0.0856781	0.8691046	0.8447889	2.6111164	2.6111164	
09:20.1	574435	6.35303E+12	4.97656E+13	5725.87	0.02809	0.0243389	0.0858817	0.8691046	0.7530456	2.6173216	2.6173216	
14:23.0	574435	6.35303E+12	4.97656E+13	5733.32	0.02809	0.0253075	0.0859934	0.8691046	0.7830141	2.620727	2.620727	
19:26.3	574437	6.35303E+12	4.98823E+13	5729.99	0.02809	0.0279034	0.0857423	0.8691046	0.8633312	2.6130745	2.6130745	
24:29.2	574438	6.35303E+12	4.9928E+13	5727.98	0.02809	0.0267925	0.0856339	0.8691046	0.82896	2.6097702	2.6097702	
29:32.2	574439	6.35303E+12	4.96328E+13	5746.56	0.02809	0.0491793	0.0864226	0.8691046	1.5216075	2.6338056	2.6338056	
34:35.1	574441	6.35303E+12	5.04581E+13	5735.82	0.02809	0.0276204	0.0848502	0.8691046	0.8545752	2.5858866	2.5858866	
39:38.1	574441	6.35303E+12	5.04581E+13	5745.02	0.02809	0.0274064	0.0849863	0.8691046	0.847954	2.5900343	2.5900343	
44:40.9	574442	6.35303E+12	5.28842E+13	5751.06	0.02809	0.0493127	0.0811728	0.8691046	1.5257349	2.4738132	2.4738132	
49:44.5	574442	6.35303E+12	5.28842E+13	5741.52	0.02809	0.0353384	0.0810381	0.8691046	1.0933701	2.4697096	2.4697096	
54:47.4	574442	6.35303E+12	5.28842E+13	5741.39	0.02809	0.027241	0.0810363	0.8691046	0.8428365	2.4696537	2.4696537	
59:50.5	574443	6.35303E+12	5.28228E+13	5739.18	0.02809	0.0260944	0.0810993	0.8691046	0.8073607	2.4715738	2.4715738	
04:53.3	574443	6.35303E+12	5.28228E+13	5735.16	0.0306575	0.0263345	0.0810425	0.9485431	0.8147894	2.4698426	2.4698426	
09:56.1	574443	6.35303E+12	5.28228E+13	5753.15	0.0306575	0.0251812	0.0812967	0.9485431	0.7791063	2.47759	2.47759	
14:59.6	574443	6.35303E+12	5.28228E+13	5760.65	0.0306575	0.0254094	0.0814027	0.9485431	0.7861668	2.4808199	2.4808199	
20:02.9	574443	6.35303E+12	5.28228E+13	5758.01	0.0306575	0.0257154	0.0813654	0.9485431	0.7956345	2.4796829	2.4796829	
25:05.9	574444	6.35303E+12	5.21447E+13	5763.51	0.0306575	0.0255742	0.0825021	0.9485431	0.7912657	2.5143244	2.5143244	
30:08.6	574445	6.35303E+12	5.19166E+13	5760.01	0.0306575	0.0285722	0.0828144	0.9485431	0.8840239	2.5238421	2.5238421	
35:11.4	574446	6.35303E+12	5.17083E+13	5750.9	0.0306575	0.0351964	0.0830164	0.9485431	1.0889766	2.5299985	2.5299985	
40:15.1	574446	6.35303E+12	5.17083E+13	5762.47	0.0306575	0.0283874	0.0831834	0.9485431	0.8783062	2.5350885	2.5350885	
45:17.8	574446	6.35303E+12	5.17083E+13	5753.72	0.0306575	0.027278	0.0830571	0.9485431	0.8439813	2.5312392	2.5312392	
50:20.6	574448	6.35303E+12	5.19511E+13	5754.06	0.0306575	0.0271803	0.0826737	0.9485431	0.8409585	2.5195561	2.5195561	

55:23.5	574448	6.35303E+12	5.19511E+13	5719.38	0.0306575	0.030583	0.0821754	0.9485431	0.946238	2.5043706	2.5043706
00:26.7	574448	6.35303E+12	5.19511E+13	5721.44	0.0298141	0.0274938	0.082205	0.9224483	0.8506582	2.5052726	2.5052726
05:29.8	574448	6.35303E+12	5.19511E+13	5706.98	0.0298141	0.025617	0.0819973	0.9224483	0.79259	2.4989409	2.4989409
10:32.8	574449	6.35303E+12	5.17328E+13	5701.52	0.0298141	0.0262028	0.0822646	0.9224483	0.8107146	2.5070865	2.5070865
15:35.6	574450	6.35303E+12	5.16724E+13	5720.36	0.0298141	0.0265338	0.0826329	0.9224483	0.8209558	2.5183117	2.5183117
20:38.2	574450	6.35303E+12	5.16724E+13	5715.9	0.0298141	0.0262195	0.0825685	0.9224483	0.8112313	2.5163482	2.5163482
25:41.0	574450	6.35303E+12	5.16724E+13	5710.01	0.0298141	0.0263037	0.0824834	0.9224483	0.8138365	2.5137552	2.5137552
30:43.8	574450	6.35303E+12	5.16724E+13	5720.01	0.0298141	0.02601	0.0826278	0.9224483	0.8047494	2.5181576	2.5181576
35:46.6	574450	6.35303E+12	5.16724E+13	5725.31	0.0298141	0.026584	0.0827044	0.9224483	0.822509	2.5204908	2.5204908
40:49.3	574452	6.35303E+12	5.09821E+13	5714.39	0.0298141	0.0267055	0.0836643	0.9224483	0.8262682	2.5497457	2.5497457
45:52.2	574454	6.35303E+12	5.11925E+13	5720.01	0.0298141	0.0254888	0.0834024	0.9224483	0.7886235	2.5417623	2.5417623
50:55.0	574454	6.35303E+12	5.11925E+13	5704.48	0.0298141	0.0247314	0.0831759	0.9224483	0.7651895	2.5348614	2.5348614
55:58.0	574454	6.35303E+12	5.11925E+13	5713.35	0.0298141	0.0244232	0.0833053	0.9224483	0.7556538	2.5388029	2.5388029
01:00.9	574454	6.35303E+12	5.11925E+13	5714.69	0.0322754	0.0256095	0.0833248	0.9986009	0.7923579	2.5393983	2.5393983
06:03.7	574454	6.35303E+12	5.11925E+13	5710.33	0.0322754	0.024586	0.0832612	0.9986009	0.7606908	2.5374609	2.5374609
11:06.7	574454	6.35303E+12	5.11925E+13	5705.52	0.0322754	0.0249145	0.0831911	0.9986009	0.7708546	2.5353235	2.5353235

FILE PRODUCED NATIVELY

datetime	block_height	network_diff	est_network_hashrate	BTC_price	day_ahead_LMP	real_time_LMP	breakeven_mining_cost	day_ahead_LMP_rev	real_time_LMP_rev	mining_rev	realized_rev
19:54.2	574204	6.35303E+12	5.38327E+13	5320.43	0.00578	0.004853	0.0737715	0.1788332	0.1501518	2.2482519	2.248252
24:57.5	574204	6.35303E+12	5.38327E+13	5320.01	0.00578	0.0059132	0.0737656	0.1788332	0.1829544	2.2480744	2.248074
30:00.6	574204	6.35303E+12	5.38327E+13	5319.98	0.00578	0.0058605	0.0737652	0.1788332	0.1813239	2.2480617	2.248062
35:04.1	574205	6.35303E+12	5.30839E+13	5323.01	0.00578	0.0046039	0.0748484	0.1788332	0.1424447	2.2810714	2.281071
40:07.2	574205	6.35303E+12	5.30839E+13	5321.94	0.00578	0.0032873	0.0748333	0.1788332	0.1017091	2.2806129	2.280613
45:10.6	574206	6.35303E+12	5.44532E+13	5326.51	0.00578	0.0019272	0.0730143	0.1788332	0.0596276	2.2251767	2.225177
50:13.5	574206	6.35303E+12	5.44532E+13	5326.54	0.00578	0.0070844	0.0730147	0.1788332	0.2191913	2.2251893	2.225189
55:16.9	574207	6.35303E+12	5.39845E+13	5328.24	0.00578	0.0006523	0.0736721	0.1788332	0.0201822	2.2452223	2.245222
00:20.2	574207	6.35303E+12	5.39845E+13	5325.77	0.0008315	0.0022674	0.0736379	0.0257266	0.0701534	2.2441815	2.244182
05:23.2	574208	6.35303E+12	5.34662E+13	5325.77	0.0008315	-0.0037312	0.0743518	0.0257266	-0.1154433	2.2659373	2.265937
10:26.1	574208	6.35303E+12	5.34662E+13	5325.01	0.0008315	-0.0087112	0.0743412	0.0257266	-0.2695245	2.2656139	2.265614
15:29.1	574209	6.35303E+12	5.33477E+13	5321.31	0.0008315	0.0006042	0.0744545	0.0257266	0.0186939	2.2690675	2.269068
20:32.0	574209	6.35303E+12	5.33477E+13	5321.01	0.0008315	0.0008759	0.0744503	0.0257266	0.0271003	2.2689395	2.26894
25:36.1	574210	6.35303E+12	5.36221E+13	5326.26	0.0008315	-0.0192181	0.0741425	0.0257266	-0.594608	2.2595592	2.259559
30:39.1	574212	6.35303E+12	5.54528E+13	5327.73	0.0008315	-0.0318283	0.0717145	0.0257266	-0.9847676	2.1855639	2.185564
35:42.2	574213	6.35303E+12	5.51131E+13	5321.02	0.0008315	-0.0308899	0.0720657	0.0257266	-0.9557335	2.1962672	2.196267
40:45.0	574215	6.35303E+12	5.58834E+13	5323.1	0.0008315	-0.0302146	0.0711001	0.0257266	-0.9348397	2.1668382	2.166838
45:47.9	574215	6.35303E+12	5.58834E+13	5323.1	0.0008315	-0.0268742	0.0711001	0.0257266	-0.8314877	2.1668382	2.166838
50:51.0	574215	6.35303E+12	5.58834E+13	5326.69	0.0008315	-0.0311753	0.071148	0.0257266	-0.9645638	2.1682995	2.1683
55:53.8	574215	6.35303E+12	5.58834E+13	5326.69	0.0008315	-0.0321213	0.071148	0.0257266	-0.993833	2.1682995	2.1683
00:56.7	574216	6.35303E+12	5.54406E+13	5328.81	0.0002678	-0.0312479	0.0717448	0.082857	-0.96681	2.1864882	2.186488
06:00.2	574216	6.35303E+12	5.54406E+13	5330.34	0.0002678	-0.0031224	0.0717654	0.082857	-0.0966071	2.187116	2.187116
11:03.3	574219	6.35303E+12	5.59245E+13	5326.73	0.0002678	-0.0192773	0.0710963	0.082857	-0.5964397	2.1667245	2.166725
16:06.7	574220	6.35303E+12	5.59914E+13	5330.77	0.0002678	-0.0176475	0.0710652	0.082857	-0.5460137	2.1657754	2.165775
21:09.7	574220	6.35303E+12	5.59914E+13	5343.69	0.0002678	-0.0277873	0.0712374	0.082857	-0.8597391	2.1710246	2.171025
26:12.7	574225	6.35303E+12	5.59876E+13	5336.9	0.0002678	-0.030291	0.0711518	0.082857	-0.9372035	2.1684142	2.168414
31:15.7	574226	6.35303E+12	5.60441E+13	5333.74	0.0002678	-0.0263247	0.0710379	0.082857	-0.8144862	2.1649441	2.164944
36:18.6	574227	6.35303E+12	5.56725E+13	5331.57	0.0002678	-0.0194362	0.071483	0.082857	-0.6013561	2.1785089	2.178509
41:21.5	574227	6.35303E+12	5.56725E+13	5332.07	0.0002678	-0.0199701	0.0714897	0.082857	-0.6178749	2.1787132	2.178713
46:24.4	574227	6.35303E+12	5.56725E+13	5343.99	0.0002678	-0.0196127	0.0716495	0.082857	-0.6068169	2.1835838	2.183584
51:27.4	574228	6.35303E+12	5.52451E+13	5343.99	0.0002678	-0.0293809	0.0722038	0.082857	-0.909045	2.2004762	2.200476
56:30.6	574229	6.35303E+12	5.5892E+13	5328.81	0.0002678	-0.0237092	0.0711654	0.082857	-0.7335626	2.1688293	2.168829
01:33.6	574229	6.35303E+12	5.5892E+13	5339.09	0.0001906	-0.0188617	0.0713027	0.0058972	-0.583581	2.1730133	2.173013
06:36.6	574229	6.35303E+12	5.5892E+13	5341.16	0.0001906	-0.0309174	0.0713303	0.0058972	-0.9565844	2.1738558	2.173856
11:39.5	574230	6.35303E+12	5.53347E+13	5346.19	0.0001906	-0.0303878	0.0721165	0.0058972	-0.9401985	2.1978165	2.197817
16:43.0	574230	6.35303E+12	5.53347E+13	5351.52	0.0001906	-0.0302747	0.0721884	0.0058972	-0.9366992	2.2000077	2.200008
21:45.9	574231	6.35303E+12	5.49411E+13	5348.15	0.0001906	-0.0280594	0.0726599	0.0058972	-0.8681578	2.2143761	2.214376
26:48.7	574231	6.35303E+12	5.49411E+13	5345.36	0.0001906	-0.0282238	0.072622	0.0058972	-0.8732444	2.2132209	2.213221
31:52.1	574231	6.35303E+12	5.49411E+13	5345.35	0.0001906	-0.0268535	0.0726219	0.0058972	-0.8308473	2.2132168	2.213217
36:55.6	574232	6.35303E+12	5.47061E+13	5345.57	0.0001906	-0.0274178	0.0729368	0.0058972	-0.8483067	2.222815	2.222815
41:58.8	574232	6.35303E+12	5.47061E+13	5346.06	0.0001906	-0.0274027	0.0729435	0.0058972	-0.8478395	2.2230187	2.223019
47:01.8	574232	6.35303E+12	5.47061E+13	5364.94	0.0001906	-0.028909	0.0732011	0.0058972	-0.8944445	2.2308695	2.23087
52:04.7	574232	6.35303E+12	5.47061E+13	5358.68	0.0001906	-0.028169	0.0731157	0.0058972	-0.8715489	2.2282664	2.228266
57:07.9	574232	6.35303E+12	5.47061E+13	5363.38	0.0001906	-0.0263077	0.0731798	0.0058972	-0.8139602	2.2302208	2.230221
02:11.0	574233	6.35303E+12	5.35475E+13	5374.99	0.002727	-0.0263014	0.074925	0.0843734	-0.8137653	2.283406	2.283406
07:14.0	574233	6.35303E+12	5.35475E+13	5371.65	0.002727	-0.0028313	0.0748784	0.0843734	-0.0876004	2.2819871	2.281987
12:17.0	574233	6.35303E+12	5.35475E+13	5364.6	0.002727	-0.0008554	0.0747801	0.0843734	-0.0264661	2.2789921	2.278992
17:20.3	574233	6.35303E+12	5.35475E+13	5366.68	0.002727	-0.0182652	0.0748091	0.0843734	-0.5651253	2.2798757	2.279876
22:23.4	574234	6.35303E+12	5.31615E+13	5358.76	0.002727	-0.0019519	0.0752411	0.0843734	-0.0603918	2.2930408	2.293041

27:26.4	574234	6.35303E+12	5.31615E+13	5358.18	0.002727	-0.0147848	0.075233	0.0843734	-0.4574417	2.2927926	2.292793	
32:29.3	574234	6.35303E+12	5.31615E+13	5349.69	0.002727	-0.0033411	0.0751138	0.0843734	-0.1033736	2.2891597	2.28916	
37:32.1	574235	6.35303E+12	5.26774E+13	5347.97	0.002727	-0.016204	0.0757796	0.0843734	-0.5013518	2.3094528	2.309453	
42:35.1	574236	6.35303E+12	5.29706E+13	5347.88	0.002727	-0.031637	0.075359	0.0843734	-0.9788488	2.2966332	2.296633	
47:38.0	574237	6.35303E+12	5.26741E+13	5352.24	0.002727	-0.0303036	0.075845	0.0843734	-0.9375934	2.3114455	2.311446	
52:40.8	574238	6.35303E+12	5.2719E+13	5350.15	0.002727	-0.0054995	0.0757508	0.0843734	-0.1701545	2.308573	2.308573	
57:43.7	574238	6.35303E+12	5.2719E+13	5357.76	0.002727	-0.0016084	0.0758585	0.0843734	-0.0497639	2.3118566	2.311857	
02:46.6	574239	6.35303E+12	5.28168E+13	5351.07	0.0122937	-0.0317924	0.0756235	0.3803671	-0.9836569	2.3046947	2.304695	
07:49.3	574240	6.35303E+12	5.25658E+13	5350.11	0.0122937	-0.0305799	0.075971	0.3803671	-0.9461421	2.3152833	2.315283	
12:52.7	574242	6.35303E+12	5.34165E+13	5352.35	0.0122937	-2.70E-06	0.0747924	0.3803671	-8.35E-05	2.2793657	2.279366	
17:55.6	574243	6.35303E+12	5.35108E+13	5355.51	0.0122937	0.0003845	0.0747047	0.3803671	0.0118964	2.2766932	2.276693	
22:58.3	574245	6.35303E+12	5.38531E+13	5358.7	0.0122937	0.000944	0.074274	0.3803671	0.0292074	2.2635674	2.263567	
28:01.2	574246	6.35303E+12	5.41667E+13	5358.74	0.0122937	-0.0033438	0.0738446	0.3803671	-0.1034572	2.2504797	2.25048	
33:04.2	574246	6.35303E+12	5.41667E+13	5361.99	0.0122937	-0.001393	0.0738894	0.3803671	-0.0430994	2.2518446	2.251845	
38:07.1	574246	6.35303E+12	5.41667E+13	5364.93	0.0122937	0.0048462	0.0739299	0.3803671	0.1499414	2.2530793	2.253079	
43:10.0	574247	6.35303E+12	5.37144E+13	5365.93	0.0122937	-0.0155818	0.0745663	0.3803671	-0.4821009	2.2724742	2.272474	
48:12.9	574249	6.35303E+12	5.43573E+13	5360.33	0.0122937	-0.0014069	0.0736074	0.3803671	-0.0435295	2.2432526	2.243253	
53:15.7	574251	6.35303E+12	5.52479E+13	5359.19	0.0122937	0.0018241	0.0724055	0.3803671	0.0564377	2.2066234	2.206623	
58:18.7	574252	6.35303E+12	5.50584E+13	5357.99	0.0122937	0.0017661	0.0726385	0.3803671	0.0546431	2.2137229	2.213723	
03:21.9	574252	6.35303E+12	5.50584E+13	5360.64	0.0171962	0.0051394	0.0726744	0.5320504	0.159013	2.2148178	2.214818	
08:26.1	574253	6.35303E+12	5.55506E+13	5362.51	0.0171962	0.1603687	0.0720555	0.5320504	4.9618076	2.195957	4.961808	
13:29.5	574254	6.35303E+12	5.55733E+13	5360.24	0.0171962	0.01377	0.0719957	0.5320504	0.4260438	2.1941337	2.194134	
18:32.5	574255	6.35303E+12	5.5978E+13	5358.19	0.0171962	0.0100579	0.0714478	0.5320504	0.3111914	2.1774367	2.177437	
23:35.5	574257	6.35303E+12	5.59531E+13	5367.35	0.0171962	0.0107012	0.0716018	0.5320504	0.3310951	2.1821286	2.182129	
28:38.4	574257	6.35303E+12	5.59531E+13	5368.93	0.0171962	0.0084507	0.0716229	0.5320504	0.2614647	2.182771	2.182771	
33:41.3	574257	6.35303E+12	5.59531E+13	5368.01	0.0171962	0.0069194	0.0716106	0.5320504	0.2140862	2.182397	2.182397	
38:44.2	574258	6.35303E+12	5.61961E+13	5368.01	0.0171962	0.0068217	0.071301	0.5320504	0.2110634	2.1729618	2.172962	
43:47.2	574258	6.35303E+12	5.61961E+13	5363.48	0.0171962	0.0079017	0.0712408	0.5320504	0.2444786	2.1711281	2.171128	
48:50.1	574258	6.35303E+12	5.61961E+13	5363.48	0.0171962	0.0076457	0.0712408	0.5320504	0.236558	2.1711281	2.171128	
53:56.7	574258	6.35303E+12	5.61961E+13	5368.74	0.0171962	0.0078845	0.0713107	0.5320504	0.2439464	2.1732573	2.173257	
58:59.6	574258	6.35303E+12	5.61961E+13	5368.9	0.0171962	0.0094093	0.0713128	0.5320504	0.2911237	2.1733221	2.173322	
04:02.6	574258	6.35303E+12	5.61961E+13	5360.85	0.0175577	0.0099461	0.0712059	0.5432352	0.3077323	2.1700634	2.170063	
09:05.6	574258	6.35303E+12	5.61961E+13	5360.96	0.0175577	0.0140156	0.0712073	0.5432352	0.4336427	2.170108	2.170108	
14:08.7	574260	6.35303E+12	5.46276E+13	5364.69	0.0175577	0.0115262	0.0733029	0.5432352	0.3566206	2.2339708	2.233971	
19:11.6	574260	6.35303E+12	5.46276E+13	5368.72	0.0175577	0.0089289	0.0733579	0.5432352	0.2762602	2.2356489	2.235649	
24:14.7	574260	6.35303E+12	5.46276E+13	5366.48	0.0175577	0.0086263	0.0733273	0.5432352	0.2668977	2.2347162	2.234716	
29:17.6	574260	6.35303E+12	5.46276E+13	5367.76	0.0175577	0.007468	0.0733448	0.5432352	0.2310599	2.2352492	2.235249	
34:20.8	574261	6.35303E+12	5.36607E+13	5366.92	0.0175577	0.0084062	0.0746547	0.5432352	0.2600878	2.2751678	2.275168	
39:23.6	574261	6.35303E+12	5.36607E+13	5366.01	0.0175577	0.007763	0.074642	0.5432352	0.2401872	2.2747821	2.274782	
44:26.5	574261	6.35303E+12	5.36607E+13	5364.41	0.0175577	0.0087491	0.0746197	0.5432352	0.2706972	2.2741038	2.274104	
49:29.5	574261	6.35303E+12	5.36607E+13	5364.3	0.0175577	0.0087159	0.0746182	0.5432352	0.2696699	2.2740572	2.274057	
54:32.3	574261	6.35303E+12	5.36607E+13	5377.85	0.0175577	0.0108497	0.0748067	0.5432352	0.3356897	2.2798013	2.279801	
59:35.3	574264	6.35303E+12	5.43564E+13	5373.82	0.0175577	0.008836	0.0737939	0.5432352	0.2733858	2.2489354	2.248935	
04:38.1	574267	6.35303E+12	5.54387E+13	5366.58	0.0193084	0.0083686	0.0722558	0.5974019	0.2589245	2.2020604	2.20206	
09:40.9	574268	6.35303E+12	5.60115E+13	5356.55	0.0193084	0.0080606	0.0713832	0.5974019	0.249395	2.1754678	2.175468	
14:43.6	574269	6.35303E+12	5.58958E+13	5342.94	0.0193084	0.0088646	0.0713492	0.5974019	0.2742707	2.1744317	2.174432	
19:46.6	574270	6.35303E+12	5.6144E+13	5354.22	0.0193084	0.0082941	0.0711837	0.5974019	0.2566195	2.1693883	2.169388	
24:49.9	574271	6.35303E+12	5.6095E+13	5356.83	0.0193084	0.0080762	0.0712807	0.5974019	0.2498776	2.1723438	2.172344	
29:52.8	574271	6.35303E+12	5.6095E+13	5351.83	0.0193084	0.0079524	0.0712142	0.5974019	0.2460473	2.1703161	2.170316	
34:55.7	574272	6.35303E+12	5.54087E+13	5355.01	0.0193084	0.0081254	0.0721391	0.5974019	0.2513999	2.1985034	2.198503	

39:58.5	574273	6.35303E+12	5.53104E+13	5355.83	0.0193084	0.0085607	0.0722783	0.5974019	0.2648681	2.2027469	2.202747	
45:01.9	574274	6.35303E+12	5.53441E+13	5354.54	0.0193084	0.0106324	0.072217	0.5974019	0.3289665	2.2008772	2.200877	
50:05.0	574274	6.35303E+12	5.53441E+13	5352.64	0.0193084	0.0119823	0.0721913	0.5974019	0.3707324	2.2000962	2.200096	
55:07.9	574274	6.35303E+12	5.53441E+13	5355.99	0.0193084	0.0171955	0.0722365	0.5974019	0.5320288	2.2014732	2.201473	
00:10.9	574274	6.35303E+12	5.53441E+13	5375.12	0.021824	0.014679	0.0724945	0.6752346	0.4541683	2.2093362	2.209336	
05:13.9	574274	6.35303E+12	5.53441E+13	5371.63	0.021824	0.0098275	0.0724475	0.6752346	0.3040628	2.2079017	2.207902	
10:17.8	574274	6.35303E+12	5.53441E+13	5366.65	0.021824	0.0157044	0.0723803	0.6752346	0.4858941	2.2058548	2.205855	
15:20.8	574274	6.35303E+12	5.53441E+13	5362.88	0.021824	0.0161219	0.0723295	0.6752346	0.4988116	2.2043052	2.204305	
20:23.7	574275	6.35303E+12	5.36343E+13	5367	0.021824	0.016142	0.0746925	0.6752346	0.4994335	2.2763203	2.27632	
25:26.5	574275	6.35303E+12	5.36343E+13	5371.56	0.021824	0.0159439	0.0747559	0.6752346	0.4933043	2.2782544	2.278254	
30:29.4	574276	6.35303E+12	5.309E+13	5370.52	0.021824	0.0201562	0.0755079	0.6752346	0.6236328	2.3011697	2.30117	
35:32.1	574278	6.35303E+12	5.49235E+13	5373.23	0.021824	0.0193584	0.0730239	0.6752346	0.5989489	2.2254696	2.22547	
40:35.0	574281	6.35303E+12	5.67946E+13	5385.74	0.021824	0.0173956	0.0707827	0.6752346	0.5382199	2.1571652	2.157165	
45:37.8	574281	6.35303E+12	5.67946E+13	5380.67	0.021824	0.0172587	0.070716	0.6752346	0.5339842	2.1551345	2.155135	
50:40.6	574281	6.35303E+12	5.67946E+13	5377.85	0.021824	0.0135506	0.070679	0.6752346	0.4192556	2.154005	2.154005	
55:43.6	574282	6.35303E+12	5.6096E+13	5376.85	0.021824	0.0181589	0.0715459	0.6752346	0.5618364	2.1804251	2.180425	
00:46.5	574282	6.35303E+12	5.6096E+13	5379.99	0.0237731	0.0180514	0.0715877	0.7355397	0.5585103	2.1816984	2.181698	
05:49.7	574283	6.35303E+12	5.56063E+13	5400.03	0.0237731	0.0201106	0.0724871	0.7355397	0.622222	2.2091081	2.209108	
10:52.9	574283	6.35303E+12	5.56063E+13	5401.02	0.0237731	0.0199693	0.0725003	0.7355397	0.6178501	2.2095131	2.209513	
15:55.8	574283	6.35303E+12	5.56063E+13	5411.08	0.0237731	0.0212877	0.0726354	0.7355397	0.6586414	2.2136286	2.213629	
20:59.8	574284	6.35303E+12	5.64188E+13	5401.02	0.0237731	0.0208648	0.0714563	0.7355397	0.6455569	2.177694	2.177694	
26:03.1	574284	6.35303E+12	5.64188E+13	5401.31	0.0237731	0.0203588	0.0714601	0.7355397	0.6299013	2.1778109	2.177811	
31:06.6	574285	6.35303E+12	5.57835E+13	5409.35	0.0237731	0.0207637	0.0723816	0.7355397	0.6424289	2.2058933	2.205893	
36:09.6	574285	6.35303E+12	5.57835E+13	5396.6	0.0237731	0.0198566	0.072211	0.7355397	0.6143632	2.2006939	2.200694	
41:12.5	574285	6.35303E+12	5.57835E+13	5405.56	0.0237731	0.0206568	0.0723309	0.7355397	0.6391214	2.2043478	2.204348	
46:15.4	574285	6.35303E+12	5.57835E+13	5401.1	0.0237731	0.0203991	0.0722712	0.7355397	0.6311482	2.202529	2.202529	
51:18.8	574285	6.35303E+12	5.57835E+13	5400.14	0.0237731	0.0206351	0.0722583	0.7355397	0.63845	2.2021375	2.202138	
56:21.7	574285	6.35303E+12	5.57835E+13	5401.59	0.0237731	0.0206066	0.0722777	0.7355397	0.6375682	2.2027288	2.202729	
01:25.2	574285	6.35303E+12	5.57835E+13	5405.56	0.0248369	0.0206776	0.0723309	0.7684537	0.6397649	2.2043478	2.204348	
06:28.3	574285	6.35303E+12	5.57835E+13	5409.65	0.0248369	0.0208352	0.0723856	0.7684537	0.6446411	2.2060156	2.206016	
11:31.3	574286	6.35303E+12	5.36818E+13	5410.84	0.0248369	0.0207924	0.075236	0.7684537	0.6433169	2.2928844	2.292884	
16:34.7	574287	6.35303E+12	5.50908E+13	5403.01	0.0248369	0.020789	0.0732057	0.7684537	0.6432117	2.2310097	2.23101	
21:38.0	574287	6.35303E+12	5.50908E+13	5380.86	0.0248369	0.0208418	0.0729056	0.7684537	0.6448453	2.2218635	2.221864	
26:41.1	574288	6.35303E+12	5.6446E+13	5384.99	0.0248369	0.0208444	0.0712098	0.7684537	0.6449257	2.1701832	2.170183	
31:44.2	574289	6.35303E+12	5.61643E+13	5388.52	0.0248369	0.0219035	0.071614	0.7684537	0.6776943	2.1824996	2.1825	
36:47.6	574289	6.35303E+12	5.61643E+13	5385.01	0.0248369	0.0219719	0.0715673	0.7684537	0.6798106	2.1810779	2.181078	
41:50.8	574289	6.35303E+12	5.61643E+13	5382.53	0.0248369	0.0214093	0.0715343	0.7684537	0.6624037	2.1800735	2.180074	
46:53.8	574289	6.35303E+12	5.61643E+13	5379.16	0.0248369	0.0219768	0.0714896	0.7684537	0.6799622	2.1787085	2.178709	
51:56.9	574292	6.35303E+12	5.59818E+13	5379.99	0.0248369	0.0220687	0.0717336	0.7684537	0.6828056	2.1861462	2.186146	
57:00.0	574293	6.35303E+12	5.63654E+13	5381.68	0.0248369	0.0220272	0.0712679	0.7684537	0.6815216	2.1719525	2.171953	
02:02.8	574294	6.35303E+12	5.66874E+13	5378.04	0.026102	0.0214717	0.0708151	0.8075959	0.6643344	2.1581537	2.158154	
07:05.8	574295	6.35303E+12	5.71185E+13	5388.44	0.026102	0.0216698	0.0704165	0.8075959	0.6704636	2.1460054	2.146005	
12:09.0	574296	6.35303E+12	5.69506E+13	5391.26	0.026102	0.0218279	0.070661	0.8075959	0.6753552	2.1534583	2.153458	
17:12.0	574298	6.35303E+12	5.77593E+13	5388.44	0.026102	0.0242173	0.0696352	0.8075959	0.7492833	2.1221966	2.122197	
22:15.5	574298	6.35303E+12	5.77593E+13	5392.01	0.026102	0.0224338	0.0696814	0.8075959	0.6941018	2.1236027	2.123603	
27:18.5	574298	6.35303E+12	5.77593E+13	5397.27	0.026102	0.0259045	0.0697494	0.8075959	0.8014852	2.1256743	2.125674	
32:21.8	574300	6.35303E+12	5.74492E+13	5392.2	0.026102	0.0266314	0.07006	0.8075959	0.8239755	2.1351406	2.135141	
37:25.9	574301	6.35303E+12	5.7613E+13	5391.27	0.026102	0.0850755	0.0698488	0.8075959	2.632236	2.1287047	2.632236	
42:30.2	574301	6.35303E+12	5.7613E+13	5391.55	0.026102	0.2222933	0.0698524	0.8075959	6.8777547	2.1288153	6.877755	
47:34.8	574302	6.35303E+12	5.77583E+13	5397.52	0.026102	0.1579206	0.0697538	0.8075959	4.8860634	2.1258102	4.886063	

52:39.0	574302	6.35303E+12	5.77583E+13	5396.44	0.026102	0.1798101	0.0697399	0.8075959	5.5633245	2.1253849	5.563325
57:42.9	574305	6.35303E+12	5.8471E+13	5390.94	0.026102	0.1776521	0.0688196	0.8075959	5.496556	2.097339	5.496556
02:47.4	574305	6.35303E+12	5.8471E+13	5391.58	0.0283817	0.2214449	0.0688278	0.8781298	6.8515052	2.097588	6.851505
07:50.3	574305	6.35303E+12	5.8471E+13	5393.02	0.0283817	0.0381924	0.0688461	0.8781298	1.1816729	2.0981483	2.098148
12:53.3	574306	6.35303E+12	5.85526E+13	5393.03	0.0283817	0.0284554	0.0687504	0.8781298	0.8804101	2.0952297	2.09523
17:56.2	574309	6.35303E+12	6.00748E+13	5395.99	0.0283817	0.0254553	0.0670451	0.8781298	0.787587	2.0432598	2.04326
22:59.6	574309	6.35303E+12	6.00748E+13	5395.98	0.0283817	0.0262791	0.067045	0.8781298	0.8130754	2.043256	2.043256
28:03.3	574310	6.35303E+12	6.02983E+13	5397.49	0.0283817	0.0261018	0.0668152	0.8781298	0.8075897	2.0362532	2.036253
33:06.3	574311	6.35303E+12	6.01255E+13	5398.95	0.0283817	0.0304073	0.0670253	0.8781298	0.9408019	2.0426553	2.042655
38:09.3	574312	6.35303E+12	5.99055E+13	5397.51	0.0283817	0.0304044	0.0672535	0.8781298	0.9407121	2.0496101	2.04961
43:12.3	574312	6.35303E+12	5.99055E+13	5396.26	0.0283817	0.0304455	0.0672379	0.8781298	0.9419838	2.0491354	2.049135
48:15.1	574314	6.35303E+12	5.98595E+13	5395.6	0.0283817	0.0262044	0.0672813	0.8781298	0.8107641	2.0504592	2.050459
53:18.0	574315	6.35303E+12	5.97623E+13	5391.83	0.0283817	0.0289928	0.0673437	0.8781298	0.8970372	2.0523603	2.05236
58:21.0	574315	6.35303E+12	5.97623E+13	5389.24	0.0283817	0.0264685	0.0673114	0.8781298	0.8189354	2.0513744	2.051374
03:26.0	574317	6.35303E+12	6.04051E+13	5387.74	0.0300741	0.2152297	0.0665766	0.9304927	6.6592069	2.0289816	6.659207
08:29.4	574317	6.35303E+12	6.04051E+13	5389.07	0.0300741	0.0276958	0.066593	0.9304927	0.8569081	2.0294825	2.029483
13:33.7	574320	6.35303E+12	6.21737E+13	5394.18	0.0300741	0.228944	0.06476	0.9304927	7.0835274	1.9736205	7.083527
18:36.6	574320	6.35303E+12	6.21737E+13	5398.38	0.0300741	0.049694	0.0648105	0.9304927	1.5375324	1.9751572	1.975157
23:39.6	574320	6.35303E+12	6.21737E+13	5403.1	0.0300741	0.0377784	0.0648671	0.9304927	1.1688637	1.9768841	1.976884
28:42.4	574320	6.35303E+12	6.21737E+13	5406.31	0.0300741	0.0309783	0.0649057	0.9304927	0.9584686	1.9780586	1.978059
33:45.1	574321	6.35303E+12	6.17749E+13	5402.68	0.0300741	0.0285783	0.0652808	0.9304927	0.8842126	1.989492	1.989492
38:48.0	574321	6.35303E+12	6.17749E+13	5407.64	0.0300741	0.028437	0.0653408	0.9304927	0.8798408	1.9913185	1.991319
43:51.4	574321	6.35303E+12	6.17749E+13	5407.6	0.0300741	0.0279646	0.0653403	0.9304927	0.8652247	1.9913038	1.991304
48:54.4	574321	6.35303E+12	6.17749E+13	5409.48	0.0300741	0.0281608	0.065363	0.9304927	0.8712952	1.9919961	1.991996
53:57.3	574321	6.35303E+12	6.17749E+13	5414.01	0.0300741	0.0281735	0.0654177	0.9304927	0.8716881	1.9936642	1.993664
59:00.1	574321	6.35303E+12	6.17749E+13	5398.73	0.0300741	0.0270448	0.0652331	0.9304927	0.8367661	1.9880375	1.988038
04:03.7	574321	6.35303E+12	6.17749E+13	5392.99	0.0293844	0.0270641	0.0651637	0.9091533	0.8373633	1.9859238	1.985924
09:06.9	574321	6.35303E+12	6.17749E+13	5391.48	0.0293844	0.027187	0.0651455	0.9091533	0.8411658	1.9853677	1.985368
14:10.4	574321	6.35303E+12	6.17749E+13	5395.84	0.0293844	0.0269481	0.0651982	0.9091533	0.8337742	1.9869732	1.986973
19:13.3	574321	6.35303E+12	6.17749E+13	5394.88	0.0293844	0.0270086	0.0651866	0.9091533	0.8356461	1.9866197	1.98662
24:16.5	574321	6.35303E+12	6.17749E+13	5394.01	0.0293844	0.027136	0.0651761	0.9091533	0.8395878	1.9862994	1.986299
29:19.7	574321	6.35303E+12	6.17749E+13	5393.45	0.0293844	0.0270192	0.0651693	0.9091533	0.835974	1.9860931	1.986093
34:22.8	574322	6.35303E+12	5.8824E+13	5392.88	0.0293844	0.0269702	0.0684313	0.9091533	0.834458	2.0855052	2.085505
39:26.1	574322	6.35303E+12	5.8824E+13	5394.38	0.0293844	0.0262735	0.0684503	0.9091533	0.8129021	2.0860853	2.086085
44:29.0	574323	6.35303E+12	5.85421E+13	5392.66	0.0293844	0.0276092	0.068758	0.9091533	0.8542286	2.0954606	2.095461
49:31.9	574323	6.35303E+12	5.85421E+13	5399.52	0.0293844	0.0268734	0.0688454	0.9091533	0.831463	2.0981263	2.098126
54:34.7	574324	6.35303E+12	5.81584E+13	5403.19	0.0293844	0.0277725	0.0693467	0.9091533	0.8592812	2.1134037	2.113404
59:37.5	574326	6.35303E+12	5.98016E+13	5404.52	0.0293844	0.0305521	0.0674579	0.9091533	0.945282	2.055839	2.055839
04:40.2	574326	6.35303E+12	5.98016E+13	5400.73	0.0303728	0.0361938	0.0674106	0.9397344	1.1198362	2.0543973	2.054397
09:43.0	574327	6.35303E+12	5.96067E+13	5400.79	0.0303728	0.0289272	0.0676317	0.9397344	0.8950076	2.0611364	2.061136
14:45.8	574327	6.35303E+12	5.96067E+13	5402.51	0.0303728	0.0277593	0.0676532	0.9397344	0.8588727	2.0617928	2.061793
19:48.6	574328	6.35303E+12	5.96752E+13	5405.01	0.0303728	0.0260079	0.0676069	0.9397344	0.8046844	2.0603812	2.060381
24:53.1	574328	6.35303E+12	5.96752E+13	5405.56	0.0303728	0.027473	0.0676138	0.9397344	0.8500146	2.0605909	2.060591
29:56.2	574328	6.35303E+12	5.96752E+13	5413.98	0.0303728	0.0272669	0.0677191	0.9397344	0.8436379	2.0638005	2.063801
34:59.4	574329	6.35303E+12	5.94855E+13	5414.16	0.0303728	0.027398	0.0679373	0.9397344	0.8476941	2.0704516	2.070452
40:02.3	574330	6.35303E+12	5.97035E+13	5414.01	0.0303728	0.0273913	0.0676874	0.9397344	0.8474868	2.0628341	2.062834
45:05.1	574331	6.35303E+12	5.96567E+13	5411.51	0.0303728	0.0260921	0.0677092	0.9397344	0.8072896	2.0634981	2.063498
50:08.5	574333	6.35303E+12	5.9734E+13	5408.31	0.0303728	0.0272287	0.0675816	0.9397344	0.842456	2.0596102	2.05961
55:11.1	574333	6.35303E+12	5.9734E+13	5400.01	0.0303728	0.0272351	0.0674779	0.9397344	0.842654	2.0564494	2.056449
05:16.6	574335	6.35303E+12	5.9018E+13	5400.72	0.0292151	0.0284932	0.0683055	0.9039152	0.8815796	2.0816708	2.081671

10:20.2	574337	6.35303E+12	6.04407E+13	5401.43	0.0292151	0.0273247	0.0667064	0.9039152	0.8454262	2.0329364	2.032936	
15:23.2	574337	6.35303E+12	6.04407E+13	5403.84	0.0292151	0.0270874	0.0667361	0.9039152	0.8380842	2.0338434	2.033843	
20:26.3	574340	6.35303E+12	6.01388E+13	5404.02	0.0292151	0.0266421	0.0670734	0.9039152	0.8243066	2.044123	2.044123	
30:31.9	574342	6.35303E+12	6.0482E+13	5405.55	0.0292151	0.0261271	0.0667116	0.9039152	0.8083725	2.0330975	2.033098	
35:34.8	574343	6.35303E+12	5.99395E+13	5400.01	0.0292151	0.0267626	0.0672465	0.9039152	0.8280348	2.0493965	2.049397	
40:37.9	574343	6.35303E+12	5.99395E+13	5399.02	0.0292151	0.0266166	0.0672341	0.9039152	0.8235176	2.0490207	2.049021	
45:41.0	574344	6.35303E+12	5.95861E+13	5399.01	0.0292151	0.0272594	0.0676328	0.9039152	0.8434058	2.0611697	2.06117	
50:43.8	574344	6.35303E+12	5.95861E+13	5394.85	0.0292151	0.0266036	0.0675807	0.9039152	0.8231154	2.0595816	2.059582	
55:46.5	574344	6.35303E+12	5.95861E+13	5398.35	0.0292151	0.0268144	0.0676245	0.9039152	0.8296375	2.0609177	2.060918	
00:51.0	574345	6.35303E+12	5.83668E+13	5398.44	0.0282594	0.2283316	0.0690384	0.8743458	7.0645797	2.1040074	7.06458	
05:53.8	574346	6.35303E+12	5.84022E+13	5394.51	0.0282594	0.0270103	0.0689463	0.8743458	0.8356987	2.1012014	2.101201	
10:57.1	574347	6.35303E+12	5.86008E+13	5396.65	0.0282594	0.0270877	0.0687399	0.8743458	0.8380934	2.0949115	2.094912	
16:00.5	574347	6.35303E+12	5.86008E+13	5399.98	0.0282594	0.0272394	0.0687824	0.8743458	0.842787	2.0962041	2.096204	
21:03.5	574348	6.35303E+12	5.87322E+13	5397.6	0.0282594	0.0269131	0.0685982	0.8743458	0.8326913	2.0905929	2.090593	
26:07.8	574348	6.35303E+12	5.87322E+13	5396.94	0.0282594	0.2272329	0.0685898	0.8743458	7.0305859	2.0903373	7.030586	
31:11.2	574349	6.35303E+12	5.84595E+13	5395.06	0.0282594	0.0368119	0.0688857	0.8743458	1.1389602	2.0993542	2.099354	
36:14.2	574350	6.35303E+12	5.91267E+13	5396.77	0.0282594	0.0273647	0.06813	0.8743458	0.8466638	2.0763241	2.076324	
41:17.0	574350	6.35303E+12	5.91267E+13	5395.88	0.0282594	0.0250754	0.0681188	0.8743458	0.7758329	2.0759816	2.075982	
46:20.3	574351	6.35303E+12	5.92508E+13	5395.8	0.0282594	0.0257701	0.0679751	0.8743458	0.7973269	2.0716025	2.071603	
51:23.3	574351	6.35303E+12	5.92508E+13	5393.06	0.0282594	0.0249811	0.0679406	0.8743458	0.7729152	2.0705505	2.070551	
56:25.9	574351	6.35303E+12	5.92508E+13	5391.33	0.0282594	0.0252147	0.0679188	0.8743458	0.7801428	2.0698863	2.069886	
01:28.7	574351	6.35303E+12	5.92508E+13	5390.01	0.0294875	0.0252863	0.0679022	0.9123433	0.7823581	2.0693795	2.06938	
06:31.8	574351	6.35303E+12	5.92508E+13	5374.44	0.0294875	0.0227695	0.067706	0.9123433	0.7044883	2.0634017	2.063402	
11:34.6	574351	6.35303E+12	5.92508E+13	5371.81	0.0294875	0.0228204	0.0676729	0.9123433	0.7060632	2.062392	2.062392	
16:37.4	574352	6.35303E+12	5.79249E+13	5372.6	0.0294875	0.024445	0.0692321	0.9123433	0.7563283	2.1099115	2.109912	
21:40.3	574353	6.35303E+12	5.95341E+13	5377.77	0.0294875	0.0231413	0.0674255	0.9123433	0.7159918	2.0548543	2.054854	
26:43.1	574353	6.35303E+12	5.95341E+13	5384.99	0.0294875	0.0250495	0.0675161	0.9123433	0.7750315	2.0576131	2.057613	
31:45.9	574353	6.35303E+12	5.95341E+13	5393.61	0.0294875	0.0254698	0.0676241	0.9123433	0.7880356	2.0609068	2.060907	
36:48.6	574353	6.35303E+12	5.95341E+13	5395.02	0.0294875	0.0254096	0.0676418	0.9123433	0.786173	2.0614455	2.061446	
41:51.5	574353	6.35303E+12	5.95341E+13	5401.49	0.0294875	0.0250828	0.0677229	0.9123433	0.7760618	2.0639177	2.063918	
46:55.3	574356	6.35303E+12	6.01278E+13	5393.39	0.0294875	0.0235193	0.0669538	0.9123433	0.7276871	2.0404768	2.040477	
51:58.7	574356	6.35303E+12	6.01278E+13	5401.9	0.0294875	0.0249891	0.0670594	0.9123433	0.7731628	2.0436963	2.043696	
57:01.6	574357	6.35303E+12	5.98782E+13	5404.01	0.0294875	0.0221317	0.0673653	0.9123433	0.6847548	2.0530169	2.053017	
02:04.6	574357	6.35303E+12	5.98782E+13	5410.44	0.0358722	0.021966	0.0674454	1.1098859	0.679628	2.0554597	2.05546	
07:08.5	574357	6.35303E+12	5.98782E+13	5413.48	0.0358722	0.0217579	0.0674833	1.1098859	0.6731894	2.0566147	2.056615	
12:11.9	574359	6.35303E+12	5.99023E+13	5412.99	0.0358722	0.0219837	0.0674501	1.1098859	0.6801757	2.0556012	2.055601	
17:15.2	574360	6.35303E+12	6.0023E+13	5413.64	0.0358722	0.0220791	0.0673224	1.1098859	0.6831274	2.0517109	2.051711	
22:18.3	574360	6.35303E+12	6.0023E+13	5409.57	0.0358722	0.0229158	0.0672718	1.1098859	0.7090149	2.0501684	2.050168	
27:22.6	574360	6.35303E+12	6.0023E+13	5403.2	0.0358722	0.0226755	0.0671926	1.1098859	0.70158	2.0477543	2.047754	
32:25.6	574361	6.35303E+12	5.95038E+13	5409.65	0.0358722	0.0247112	0.0678598	1.1098859	0.7645645	2.068088	2.068088	
37:29.5	574361	6.35303E+12	5.95038E+13	5414.99	0.0358722	0.0361625	0.0679268	1.1098859	1.1188678	2.0701294	2.070129	
42:32.7	574362	6.35303E+12	5.87448E+13	5422.88	0.0358722	0.0240264	0.0689047	1.1098859	0.7433768	2.0999322	2.099932	
47:36.4	574362	6.35303E+12	5.87448E+13	5432.58	0.0358722	0.0226338	0.0690279	1.1098859	0.7002898	2.1036884	2.103688	
52:39.7	574362	6.35303E+12	5.87448E+13	5428.01	0.0358722	0.0242397	0.0689699	1.1098859	0.7499763	2.1019188	2.101919	
57:42.7	574363	6.35303E+12	5.80502E+13	5427.15	0.0358722	0.032838	0.0697841	1.1098859	1.0160077	2.1267343	2.126734	
02:45.9	574364	6.35303E+12	5.78645E+13	5427.23	0.0269724	0.048486	0.0700091	0.8345261	1.5001568	2.1335902	2.13359	
07:49.0	574364	6.35303E+12	5.78645E+13	5441.99	0.0269724	0.0436141	0.0701995	0.8345261	1.3494203	2.1393928	2.139393	
12:51.9	574365	6.35303E+12	5.73396E+13	5428.97	0.0269724	0.0245126	0.0706726	0.8345261	0.7584198	2.1538115	2.153812	
17:54.9	574367	6.35303E+12	5.84533E+13	5439.06	0.0269724	0.0248829	0.069455	0.8345261	0.7698769	2.1167024	2.116702	
22:58.1	574367	6.35303E+12	5.84533E+13	5434.48	0.0269724	0.023353	0.0693965	0.8345261	0.7225418	2.1149201	2.11492	

28:01.3	574368	6.35303E+12	5.81378E+13	5438.3	0.0269724	0.0216344	0.0698221	0.8345261	0.6693683	2.1278923	2.127892
33:04.7	574368	6.35303E+12	5.81378E+13	5439.66	0.0269724	0.0213325	0.0698396	0.8345261	0.6600276	2.1284244	2.128424
38:08.1	574369	6.35303E+12	5.7527E+13	5442.57	0.0269724	0.0208171	0.0706189	0.8345261	0.6440811	2.1521741	2.152174
43:11.1	574370	6.35303E+12	5.73316E+13	5444.99	0.0269724	0.0201683	0.0708911	0.8345261	0.6240072	2.1604697	2.16047
48:14.1	574370	6.35303E+12	5.73316E+13	5466.35	0.0269724	0.0200828	0.0711692	0.8345261	0.6213618	2.1689449	2.168945
53:17.4	574370	6.35303E+12	5.73316E+13	5469.28	0.0269724	0.0197299	0.0712073	0.8345261	0.6104431	2.1701075	2.170108
58:20.4	574373	6.35303E+12	5.75391E+13	5468.81	0.0269724	0.0200014	0.0709444	0.8345261	0.6188433	2.1620944	2.162094
03:23.6	574373	6.35303E+12	5.75391E+13	5471.06	0.0207906	0.0196896	0.0709736	0.6432612	0.6091962	2.1629839	2.162984
08:26.7	574374	6.35303E+12	5.70787E+13	5464.23	0.0207906	0.0194455	0.0714567	0.6432612	0.6016438	2.177708	2.177708
13:29.7	574374	6.35303E+12	5.70787E+13	5456.01	0.0207906	0.0198243	0.0713492	0.6432612	0.6133638	2.1744321	2.174432
23:35.9	574376	6.35303E+12	5.68162E+13	5459.27	0.0207906	0.0215706	0.0717217	0.6432612	0.6673944	2.185782	2.185782
28:38.8	574376	6.35303E+12	5.68162E+13	5454.55	0.0207906	0.0196633	0.0716596	0.6432612	0.6083825	2.1838922	2.183892
38:44.6	574377	6.35303E+12	5.63276E+13	5466.4	0.0207906	0.0221114	0.0724384	0.6432612	0.6841267	2.2076251	2.207625
43:47.3	574377	6.35303E+12	5.63276E+13	5465.31	0.0207906	0.0214445	0.0724239	0.6432612	0.6634928	2.2071849	2.207185
48:50.6	574378	6.35303E+12	5.65074E+13	5471.97	0.0207906	0.0214515	0.0722814	0.6432612	0.6637094	2.2028417	2.202842
53:53.3	574378	6.35303E+12	5.65074E+13	5467.7	0.0207906	0.0210118	0.072225	0.6432612	0.6501051	2.2011227	2.201123
58:56.2	574379	6.35303E+12	5.75462E+13	5464.7	0.0207906	0.019883	0.0708824	0.6432612	0.61518	2.1602037	2.160204
04:31.8	574384	6.35303E+12	5.65611E+13	5475.86	0.01793	0.0189255	0.0722642	0.5547542	0.585555	2.2023153	2.202315
09:34.9	574384	6.35303E+12	5.65611E+13	5473.44	0.01793	0.0188962	0.0722322	0.5547542	0.5846484	2.201342	2.201342
14:37.8	574384	6.35303E+12	5.65611E+13	5475.01	0.01793	0.018951	0.0722529	0.5547542	0.5863439	2.2019735	2.201974
19:40.7	574384	6.35303E+12	5.65611E+13	5478.95	0.01793	0.0186057	0.0723049	0.5547542	0.5756604	2.2035581	2.203558
24:43.7	574384	6.35303E+12	5.65611E+13	5485.86	0.01793	0.0184337	0.0723961	0.5547542	0.5703387	2.2063372	2.206337
29:46.4	574385	6.35303E+12	5.52675E+13	5483.01	0.01793	0.0180784	0.0740521	0.5547542	0.5593457	2.2568058	2.256806
34:49.2	574386	6.35303E+12	5.5002E+13	5487.88	0.01793	0.0183673	0.0744757	0.5547542	0.5682843	2.2697143	2.269714
39:52.0	574387	6.35303E+12	5.4816E+13	5489.7	0.01793	0.0188157	0.0747532	0.5547542	0.5821578	2.278171	2.278171
44:55.2	574387	6.35303E+12	5.4816E+13	5485.01	0.01793	0.0183954	0.0746893	0.5547542	0.5691537	2.2762247	2.276225
49:58.0	574387	6.35303E+12	5.4816E+13	5494.4	0.01793	0.0185406	0.0748172	0.5547542	0.5736462	2.2801215	2.280122
55:00.7	574387	6.35303E+12	5.4816E+13	5492.41	0.01793	0.018494	0.0747901	0.5547542	0.5722044	2.2792957	2.279296
00:04.0	574388	6.35303E+12	5.41076E+13	5491.83	0.0169796	0.0185045	0.0757612	0.5253488	0.5725292	2.3088909	2.308891
05:07.0	574388	6.35303E+12	5.41076E+13	5492.5	0.0169796	0.0185003	0.0757704	0.5253488	0.5723993	2.3091726	2.309173
10:10.3	574388	6.35303E+12	5.41076E+13	5499.47	0.0169796	0.0184926	0.0758666	0.5253488	0.572161	2.3121029	2.312103
15:13.1	574390	6.35303E+12	5.36713E+13	5499.81	0.0169796	0.0184921	0.0764881	0.5253488	0.5721456	2.3310446	2.331045
20:15.9	574393	6.35303E+12	5.4543E+13	5532.69	0.0169796	0.0189826	0.0757157	0.5253488	0.5873216	2.3075042	2.307504
25:19.0	574393	6.35303E+12	5.4543E+13	5532.49	0.0169796	0.0194997	0.075713	0.5253488	0.6033207	2.3074208	2.307421
30:22.4	574393	6.35303E+12	5.4543E+13	5536.93	0.0169796	0.01969	0.0757737	0.5253488	0.6092086	2.3092726	2.309273
35:25.7	574393	6.35303E+12	5.4543E+13	5564.48	0.0169796	0.0196471	0.0761508	0.5253488	0.6078813	2.3207628	2.320763
40:28.5	574394	6.35303E+12	5.38779E+13	5538.44	0.0169796	0.0199408	0.0767299	0.5253488	0.6169684	2.3384139	2.338414
45:31.4	574395	6.35303E+12	5.53825E+13	5520.08	0.0169796	0.0196539	0.074398	0.5253488	0.6080917	2.2673468	2.267347
50:34.1	574395	6.35303E+12	5.53825E+13	5520.48	0.0169796	0.0197095	0.0744034	0.5253488	0.6098119	2.2675111	2.267511
55:37.0	574395	6.35303E+12	5.53825E+13	5515.98	0.0169796	0.0193539	0.0743428	0.5253488	0.5988097	2.2656627	2.265663
00:39.8	574395	6.35303E+12	5.53825E+13	5518.69	0.0176483	0.0193487	0.0743793	0.5460384	0.5986488	2.2667759	2.266776
05:43.2	574395	6.35303E+12	5.53825E+13	5531.68	0.0176483	0.0192845	0.0745544	0.5460384	0.5966624	2.2721114	2.272111
10:46.2	574395	6.35303E+12	5.53825E+13	5528.2	0.0176483	0.0191026	0.0745075	0.5460384	0.5910344	2.270682	2.270682
15:49.5	574396	6.35303E+12	5.44713E+13	5541.2	0.0176483	0.0190542	0.075932	0.5460384	0.5895369	2.3140947	2.314095
20:52.5	574396	6.35303E+12	5.44713E+13	5544.69	0.0176483	0.0190808	0.0759798	0.5460384	0.59036	2.3155521	2.315552
25:55.5	574396	6.35303E+12	5.44713E+13	5552.98	0.0176483	0.019178	0.0760934	0.5460384	0.5933673	2.3190142	2.319014
30:59.2	574397	6.35303E+12	5.38389E+13	5536.99	0.0176483	0.018807	0.0767654	0.5460384	0.5818886	2.3394943	2.339494
41:05.7	574397	6.35303E+12	5.38389E+13	5578.73	0.0176483	0.0189594	0.0773441	0.5460384	0.5866038	2.3571303	2.35713
46:09.1	574397	6.35303E+12	5.38389E+13	5587.27	0.0176483	0.0190541	0.0774625	0.5460384	0.5895339	2.3607386	2.360739
51:12.8	574397	6.35303E+12	5.38389E+13	5577.62	0.0176483	0.0195343	0.0773287	0.5460384	0.6043912	2.3566613	2.356661

56:15.8	574397	6.35303E+12	5.38389E+13	5578.43	0.0176483	0.0195897	0.0773399	0.5460384	0.6061053	2.3570036	2.357004	
01:18.8	574398	6.35303E+12	5.24135E+13	5585.77	0.0178528	0.0199086	0.0795478	0.5523656	0.6159721	2.42429	2.42429	
06:21.7	574399	6.35303E+12	5.22154E+13	5570.36	0.0178528	0.0200685	0.0796293	0.5523656	0.6209194	2.4267736	2.426774	
11:24.5	574400	6.35303E+12	5.19602E+13	5563.2	0.0178528	0.0198898	0.0799175	0.5523656	0.6153904	2.4355582	2.435558	
16:27.7	574400	6.35303E+12	5.19602E+13	5579.23	0.0178528	0.0199775	0.0801478	0.5523656	0.6181039	2.4425761	2.442576	
21:30.9	574400	6.35303E+12	5.19602E+13	5571.91	0.0178528	0.0199738	0.0800426	0.5523656	0.6179894	2.4393714	2.439371	
26:33.7	574401	6.35303E+12	5.14241E+13	5570.27	0.0178528	0.0201313	0.0808533	0.5523656	0.6228624	2.4640783	2.464078	
31:36.6	574402	6.35303E+12	5.15991E+13	5562.53	0.0178528	0.0200901	0.0804671	0.5523656	0.6215877	2.4523071	2.452307	
36:39.5	574402	6.35303E+12	5.15991E+13	5598.28	0.0178528	0.0208431	0.0809843	0.5523656	0.6448855	2.4680679	2.468068	
41:42.6	574404	6.35303E+12	5.22163E+13	5622.51	0.0178528	0.0203289	0.0803735	0.5523656	0.6289762	2.4494541	2.449454	
46:45.4	574405	6.35303E+12	5.26766E+13	5610.46	0.0178528	0.0223107	0.0795004	0.5523656	0.6902931	2.4228448	2.422845	
51:48.0	574406	6.35303E+12	5.44332E+13	5697.34	0.0178528	0.0203729	0.0781261	0.5523656	0.6303375	2.3809636	2.380964	
56:51.2	574407	6.35303E+12	5.44179E+13	5660.07	0.0178528	0.0202985	0.077637	0.5523656	0.6280356	2.3660567	2.366057	
01:53.8	574407	6.35303E+12	5.44179E+13	5667.78	0.018673	0.019187	0.0777427	0.5777426	0.5936458	2.3692797	2.36928	
06:56.8	574408	6.35303E+12	5.43366E+13	5661.93	0.018673	0.0198179	0.0777787	0.5777426	0.6131658	2.3703744	2.370374	
11:59.7	574409	6.35303E+12	5.45039E+13	5688.4	0.018673	0.0201109	0.0779024	0.5777426	0.6222312	2.3741451	2.374145	
17:02.5	574409	6.35303E+12	5.45039E+13	5705.82	0.018673	0.0203436	0.0781409	0.5777426	0.629431	2.3814156	2.381416	
22:05.5	574409	6.35303E+12	5.45039E+13	5684.26	0.018673	0.0227072	0.0778457	0.5777426	0.7025608	2.3724172	2.372417	
27:08.6	574410	6.35303E+12	5.4739E+13	5675.94	0.018673	0.020882	0.0773979	0.5777426	0.6460891	2.3587711	2.358771	
32:12.0	574410	6.35303E+12	5.4739E+13	5704.8	0.018673	0.0217919	0.0777915	0.5777426	0.6742414	2.3707646	2.370765	
37:15.1	574410	6.35303E+12	5.4739E+13	5701.98	0.018673	0.0218761	0.077753	0.5777426	0.6768465	2.3695926	2.369593	
42:18.0	574410	6.35303E+12	5.4739E+13	5732.34	0.018673	0.0216156	0.078167	0.5777426	0.6687867	2.3822095	2.38221	
47:21.3	574410	6.35303E+12	5.4739E+13	5753.01	0.018673	0.0231724	0.0784489	0.5777426	0.7169541	2.3907994	2.390799	
52:24.4	574410	6.35303E+12	5.4739E+13	5756.81	0.018673	0.0236957	0.0785007	0.5777426	0.733145	2.3923786	2.392379	
07:33.5	574412	6.35303E+12	5.33495E+13	5695.4	0.0236366	0.0226621	0.0796861	0.7313164	0.7011654	2.4285046	2.428505	
12:36.5	574412	6.35303E+12	5.33495E+13	5717.23	0.0236366	0.0234957	0.0799915	0.7313164	0.726957	2.4378128	2.437813	
17:39.6	574413	6.35303E+12	5.25253E+13	5714.11	0.0236366	0.0236965	0.0812022	0.7313164	0.7331697	2.4747113	2.474711	
22:42.4	574413	6.35303E+12	5.25253E+13	5730.11	0.0236366	0.0223574	0.0814296	0.7313164	0.691738	2.4816407	2.481641	
27:45.2	574413	6.35303E+12	5.25253E+13	5715.55	0.0236366	0.0257048	0.0812227	0.7313164	0.7953065	2.475335	2.475335	
32:48.0	574414	6.35303E+12	5.19701E+13	5734.99	0.0236366	0.0255095	0.0823697	0.7313164	0.7892639	2.5102894	2.510289	
37:50.7	574414	6.35303E+12	5.19701E+13	5743.05	0.0236366	0.0257825	0.0824854	0.7313164	0.7977106	2.5138174	2.513817	
47:55.8	574419	6.35303E+12	5.263E+13	5733.81	0.0236366	0.0226332	0.0813201	0.7313164	0.7002712	2.4783037	2.478304	
52:58.6	574420	6.35303E+12	5.25895E+13	5702.24	0.0236366	0.0365861	0.0809348	0.7313164	1.1319739	2.4665598	2.46656	
03:05.1	574422	6.35303E+12	5.2543E+13	5687.09	0.0270381	0.0220677	0.080791	0.8365588	0.6827746	2.4621796	2.46218	
08:08.3	574424	6.35303E+12	5.28202E+13	5689.31	0.0270381	0.021979	0.0803985	0.8365588	0.6800303	2.4502159	2.450216	
13:11.1	574424	6.35303E+12	5.28202E+13	5696.24	0.0270381	0.0220696	0.0804964	0.8365588	0.6828334	2.4532005	2.453201	
18:13.9	574424	6.35303E+12	5.28202E+13	5678.52	0.0270381	0.0284763	0.080246	0.8365588	0.8810567	2.445569	2.445569	
23:16.6	574426	6.35303E+12	5.30049E+13	5680.01	0.0270381	0.0489843	0.0799874	0.8365588	1.5155742	2.4376872	2.437687	
28:21.0	574427	6.35303E+12	5.28466E+13	5679.28	0.0270381	0.2387125	0.0802166	0.8365588	7.3857647	2.4446732	7.385765	
33:25.0	574427	6.35303E+12	5.28466E+13	5698.99	0.0270381	0.2311826	0.080495	0.8365588	7.1527896	2.4531574	7.15279	
38:27.9	574427	6.35303E+12	5.28466E+13	5702.85	0.0270381	0.0493653	0.0805495	0.8365588	1.5273624	2.454819	2.454819	
43:31.1	574428	6.35303E+12	5.2354E+13	5722.4	0.0270381	0.0281258	0.0815862	0.8365588	0.8702123	2.4864117	2.486412	
48:33.8	574428	6.35303E+12	5.2354E+13	5716.73	0.0270381	0.0284039	0.0815053	0.8365588	0.8788167	2.483948	2.483948	
53:36.7	574428	6.35303E+12	5.2354E+13	5711.78	0.0270381	0.02865	0.0814347	0.8365588	0.886431	2.4817972	2.481797	
58:39.3	574429	6.35303E+12	5.15634E+13	5700.85	0.0270381	0.0241868	0.0825252	0.8365588	0.7483396	2.5150298	2.51503	
03:42.5	574429	6.35303E+12	5.15634E+13	5699.99	0.0277604	0.0226736	0.0825128	0.8589068	0.7015212	2.5146504	2.51465	
08:45.2	574429	6.35303E+12	5.15634E+13	5715.88	0.0277604	0.0234588	0.0827428	0.8589068	0.7258153	2.5216605	2.521661	
13:48.0	574430	6.35303E+12	5.12815E+13	5716.7	0.0277604	0.0236299	0.0832095	0.8589068	0.7311091	2.5358831	2.535883	
18:51.3	574430	6.35303E+12	5.12815E+13	5707.94	0.0277604	0.0239638	0.0830819	0.8589068	0.74144	2.5319972	2.531997	
23:54.2	574430	6.35303E+12	5.12815E+13	5728.45	0.0277604	0.0239508	0.0833805	0.8589068	0.7410378	2.5410953	2.541095	

28:57.1	574430	6.35303E+12	5.12815E+13	5736.02	0.0277604	0.0240308	0.0834907	0.8589068	0.743513	2.5444533	2.544453
33:59.8	574430	6.35303E+12	5.12815E+13	5740.86	0.0277604	0.0248987	0.0835611	0.8589068	0.7703658	2.5466002	2.5466
39:02.8	574430	6.35303E+12	5.12815E+13	5735.65	0.0277604	0.02456	0.0834853	0.8589068	0.7598864	2.5442891	2.544289
44:05.8	574430	6.35303E+12	5.12815E+13	5732.1	0.0277604	0.0249204	0.0834336	0.8589068	0.7710372	2.5427144	2.542714
49:08.6	574431	6.35303E+12	4.97074E+13	5725.7	0.0277604	0.0480883	0.0859796	0.8589068	1.487852	2.6203068	2.620307
54:11.5	574432	6.35303E+12	4.99455E+13	5720.02	0.0277604	0.0288004	0.0854849	0.8589068	0.8910844	2.6052295	2.60523
59:14.4	574432	6.35303E+12	4.99455E+13	5706.01	0.0277604	0.0478212	0.0852755	0.8589068	1.4795879	2.5988485	2.598849
04:17.3	574433	6.35303E+12	4.98413E+13	5720.99	0.027778	0.0269386	0.0856781	0.8594513	0.8334803	2.6111164	2.611116
09:20.0	574435	6.35303E+12	4.97656E+13	5725.87	0.027778	0.0240209	0.0858817	0.8594513	0.7432066	2.6173216	2.617322
14:23.2	574435	6.35303E+12	4.97656E+13	5733.32	0.027778	0.0249794	0.0859934	0.8594513	0.7728626	2.620727	2.620727
19:26.0	574437	6.35303E+12	4.98823E+13	5729.99	0.027778	0.0275281	0.0857423	0.8594513	0.8517194	2.6130745	2.613075
29:31.7	574439	6.35303E+12	4.96328E+13	5746.56	0.027778	0.0485069	0.0864226	0.8594513	1.5008035	2.6338056	2.633806
34:35.2	574441	6.35303E+12	5.04581E+13	5735.82	0.027778	0.0272909	0.0848502	0.8594513	0.8443804	2.5858866	2.585887
39:38.2	574441	6.35303E+12	5.04581E+13	5745.02	0.027778	0.0271114	0.0849863	0.8594513	0.8388267	2.5900343	2.590034
44:40.9	574442	6.35303E+12	5.28842E+13	5751.06	0.027778	0.0487904	0.0811728	0.8594513	1.509575	2.4738132	2.473813
54:46.1	574442	6.35303E+12	5.28842E+13	5741.39	0.027778	0.0269661	0.0810363	0.8594513	0.8343311	2.4696537	2.469654
59:49.2	574443	6.35303E+12	5.28228E+13	5739.18	0.027778	0.0258253	0.0810993	0.8594513	0.7990348	2.4715738	2.471574
04:52.0	574443	6.35303E+12	5.28228E+13	5735.16	0.0303126	0.0260635	0.0810425	0.9378718	0.8064047	2.4698426	2.469843
09:54.9	574443	6.35303E+12	5.28228E+13	5753.15	0.0303126	0.0249105	0.0812967	0.9378718	0.7707309	2.47759	2.47759
14:57.9	574443	6.35303E+12	5.28228E+13	5760.65	0.0303126	0.0251299	0.0814027	0.9378718	0.7775191	2.4808199	2.48082
20:00.9	574443	6.35303E+12	5.28228E+13	5758.01	0.0303126	0.0254432	0.0813654	0.9378718	0.7872126	2.4796829	2.479683
30:06.6	574445	6.35303E+12	5.19166E+13	5760.01	0.0303126	0.0282726	0.0828144	0.9378718	0.8747542	2.5238421	2.523842
35:09.9	574446	6.35303E+12	5.17083E+13	5750.9	0.0303126	0.0348358	0.0830164	0.9378718	1.0778197	2.5299985	2.529999
40:13.0	574446	6.35303E+12	5.17083E+13	5762.47	0.0303126	0.0280725	0.0831834	0.9378718	0.8685632	2.5350885	2.535089
45:15.9	574446	6.35303E+12	5.17083E+13	5753.72	0.0303126	0.026982	0.0830571	0.9378718	0.8348231	2.5312392	2.531239
50:18.7	574448	6.35303E+12	5.19511E+13	5754.06	0.0303126	0.0268925	0.0826737	0.9378718	0.832054	2.5195561	2.519556
00:24.0	574448	6.35303E+12	5.19511E+13	5721.44	0.0294253	0.0271858	0.082205	0.9104188	0.8411287	2.5052726	2.505273
05:27.0	574448	6.35303E+12	5.19511E+13	5706.98	0.0294253	0.0253359	0.0819973	0.9104188	0.7838927	2.4989409	2.498941
10:30.3	574449	6.35303E+12	5.17328E+13	5701.52	0.0294253	0.0259191	0.0822646	0.9104188	0.801937	2.5070865	2.507087
15:33.5	574450	6.35303E+12	5.16724E+13	5720.36	0.0294253	0.0262614	0.0826329	0.9104188	0.8125277	2.5183117	2.518312
20:36.3	574450	6.35303E+12	5.16724E+13	5715.9	0.0294253	0.0259411	0.0825685	0.9104188	0.8026176	2.5163482	2.516348
25:39.3	574450	6.35303E+12	5.16724E+13	5710.01	0.0294253	0.02602	0.0824834	0.9104188	0.8050588	2.5137552	2.513755
30:42.6	574450	6.35303E+12	5.16724E+13	5720.01	0.0294253	0.0257416	0.0826278	0.9104188	0.7964451	2.5181576	2.518158
35:45.4	574450	6.35303E+12	5.16724E+13	5725.31	0.0294253	0.0263149	0.0827044	0.9104188	0.814183	2.5204908	2.520491
40:48.2	574452	6.35303E+12	5.09821E+13	5714.39	0.0294253	0.0264506	0.0836643	0.9104188	0.8183816	2.5497457	2.549746
45:51.1	574454	6.35303E+12	5.11925E+13	5720.01	0.0294253	0.0252602	0.0834024	0.9104188	0.7815506	2.5417623	2.541762
50:54.1	574454	6.35303E+12	5.11925E+13	5704.48	0.0294253	0.0244985	0.0831759	0.9104188	0.7579836	2.5348614	2.534861
55:57.1	574454	6.35303E+12	5.11925E+13	5713.35	0.0294253	0.0241693	0.0833053	0.9104188	0.7477981	2.5388029	2.538803
00:59.9	574454	6.35303E+12	5.11925E+13	5714.69	0.0318592	0.0253433	0.0833248	0.9857236	0.7841217	2.5393983	2.539398
06:03.5	574454	6.35303E+12	5.11925E+13	5710.33	0.0318592	0.0243257	0.0832612	0.9857236	0.7526372	2.5374609	2.537461
11:07.4	574454	6.35303E+12	5.11925E+13	5705.52	0.0318592	0.0246413	0.0831911	0.9857236	0.7624018	2.5353235	2.535324

FILE PRODUCED NATIVELY

datetime	block_height	network_diff	est_network_hashrate	BTC_price	day_ahead_LMP	real_time_LMP	breakeven_mining_cost	day_ahead_LMP_rev	real_time_LMP_rev	mining_rev	realized_rev
22:20.9	574204	6.35303E+12	5.38327E+13	5320.02	0.0054942	0.0058423	0.0737658	0.1699905	0.1807608	2.2480786	2.2480786
27:24.1	574204	6.35303E+12	5.38327E+13	5320.01	0.0054942	0.0062269	0.0737656	0.1699905	0.1926603	2.2480744	2.2480744
32:27.2	574204	6.35303E+12	5.38327E+13	5321.94	0.0054942	0.0045157	0.0737924	0.1699905	0.1397158	2.24889	2.24889
37:30.3	574205	6.35303E+12	5.30839E+13	5321.95	0.0054942	0.0035338	0.0748335	0.1699905	0.1093358	2.2806172	2.2806172
42:33.3	574205	6.35303E+12	5.30839E+13	5326.19	0.0054942	0.002277	0.0748931	0.1699905	0.0704504	2.2824342	2.2824342
47:36.1	574206	6.35303E+12	5.44532E+13	5328.27	0.0054942	0.0051513	0.0730384	0.1699905	0.1593812	2.225912	2.225912
52:39.2	574206	6.35303E+12	5.44532E+13	5328.65	0.0054942	0.0072185	0.0730436	0.1699905	0.2233404	2.2260707	2.2260707
57:42.1	574207	6.35303E+12	5.39845E+13	5327.68	0.0054942	0.0010915	0.0736643	0.1699905	0.033771	2.2449863	2.2449863
02:45.4	574207	6.35303E+12	5.39845E+13	5327.22	0.0007072	0.0026959	0.073658	0.0218808	0.0834111	2.2447925	2.2447925
07:48.3	574208	6.35303E+12	5.34662E+13	5325.01	0.0007072	-0.0034108	0.0743412	0.0218808	-0.1055302	2.2656139	2.2656139
12:51.5	574208	6.35303E+12	5.34662E+13	5325.01	0.0007072	-0.0088288	0.0743412	0.0218808	-0.2731631	2.2656139	2.2656139
17:54.3	574209	6.35303E+12	5.33477E+13	5321.01	0.0007072	0.0005301	0.0744503	0.0218808	0.0164013	2.2689395	2.2689395
22:57.3	574209	6.35303E+12	5.33477E+13	5327.95	0.0007072	0.0007828	0.0745474	0.0218808	0.0242198	2.2718988	2.2718988
28:01.3	574211	6.35303E+12	5.42133E+13	5325.19	0.0007072	-0.0182739	0.0733191	0.0218808	-0.5653945	2.2344662	2.2344662
33:04.8	574212	6.35303E+12	5.54528E+13	5323.43	0.0007072	-0.0301375	0.0716566	0.0218808	-0.9324543	2.1838	2.1838
38:07.8	574214	6.35303E+12	5.533E+13	5323.35	0.0007072	-0.0305618	0.0718145	0.0218808	-0.9455821	2.1886119	2.1886119
43:10.7	574215	6.35303E+12	5.58834E+13	5323.1	0.0007072	-0.0284827	0.0711001	0.0218808	-0.8812547	2.1668382	2.1668382
48:13.5	574215	6.35303E+12	5.58834E+13	5326.55	0.0007072	-0.0254853	0.0711461	0.0218808	-0.7885152	2.1682425	2.1682425
53:16.6	574215	6.35303E+12	5.58834E+13	5328.3	0.0007072	-0.0291736	0.0711695	0.0218808	-0.9026312	2.1689549	2.1689549
58:19.3	574216	6.35303E+12	5.54406E+13	5326.69	0.0007072	-0.0300521	0.0717163	0.0218808	-0.929812	2.1856184	2.1856184
03:22.6	574216	6.35303E+12	5.54406E+13	5330.35	0.0001184	-0.0293821	0.0717656	0.0036633	-0.9090822	2.1871201	2.1871201
08:25.6	574218	6.35303E+12	5.58377E+13	5330.78	0.0001184	-0.0030017	0.071261	0.0036633	-0.0928726	2.1717421	2.1717421
13:28.5	574220	6.35303E+12	5.59914E+13	5329.45	0.0001184	-0.0183569	0.0710476	0.0036633	-0.5679625	2.1652392	2.1652392
18:31.4	574220	6.35303E+12	5.59914E+13	5348.41	0.0001184	-0.0168349	0.0713003	0.0036633	-0.5208718	2.1729422	2.1729422
23:34.2	574223	6.35303E+12	5.60912E+13	5338.35	0.0001184	-0.0262408	0.0710397	0.0036633	-0.8118904	2.164998	2.164998
28:37.1	574226	6.35303E+12	5.60441E+13	5328.39	0.0001184	-0.0286978	0.0709666	0.0036633	-0.8879099	2.1627725	2.1627725
33:39.9	574226	6.35303E+12	5.60441E+13	5333.1	0.0001184	-0.0249271	0.0710294	0.0036633	-0.7712445	2.1646843	2.1646843
38:43.2	574227	6.35303E+12	5.56725E+13	5332.07	0.0001184	-0.0184168	0.0714897	0.0036633	-0.5698158	2.1787132	2.1787132
43:45.9	574227	6.35303E+12	5.56725E+13	5339.02	0.0001184	-0.0190364	0.0715829	0.0036633	-0.5889862	2.181553	2.181553
48:49.2	574228	6.35303E+12	5.52451E+13	5343.15	0.0001184	-0.0188272	0.0721925	0.0036633	-0.5825136	2.2001303	2.2001303
53:52.1	574229	6.35303E+12	5.5892E+13	5338.61	0.0001184	-0.0278877	0.0712963	0.0036633	-0.8628454	2.1728179	2.1728179
58:55.4	574229	6.35303E+12	5.5892E+13	5336.51	0.0001184	-0.0228802	0.0712682	0.0036633	-0.7079134	2.1719632	2.1719632
03:58.2	574229	6.35303E+12	5.5892E+13	5340.15	4.90E-06	-0.018324	0.0713168	0.0001516	-0.5669446	2.1734447	2.1734447
09:01.3	574229	6.35303E+12	5.5892E+13	5341.69	4.90E-06	-0.0302504	0.0713374	0.0001516	-0.9359474	2.1740715	2.1740715
14:04.8	574230	6.35303E+12	5.53347E+13	5346.1	4.90E-06	-0.0297233	0.0721153	0.0001516	-0.9196389	2.1977795	2.1977795
19:07.8	574230	6.35303E+12	5.53347E+13	5347.19	4.90E-06	-0.0295915	0.07213	0.0001516	-0.915561	2.1982276	2.1982276
24:10.8	574231	6.35303E+12	5.49411E+13	5341.77	4.90E-06	-0.0275611	0.0725732	0.0001516	-0.8527404	2.2117345	2.2117345
29:13.7	574231	6.35303E+12	5.49411E+13	5342.48	4.90E-06	-0.0276163	0.0725829	0.0001516	-0.8544483	2.2120284	2.2120284
34:16.7	574232	6.35303E+12	5.47061E+13	5349.99	4.90E-06	-0.0261726	0.0729971	0.0001516	-0.8097802	2.2246529	2.2246529
39:19.5	574232	6.35303E+12	5.47061E+13	5346.06	4.90E-06	-0.0268168	0.0729435	0.0001516	-0.8297118	2.2230187	2.2230187
44:22.9	574232	6.35303E+12	5.47061E+13	5350.69	4.90E-06	-0.027105	0.0730067	0.0001516	-0.8386287	2.224944	2.224944
49:25.9	574232	6.35303E+12	5.47061E+13	5361.36	4.90E-06	-0.0282087	0.0731523	0.0001516	-0.8727772	2.2293808	2.2293808
54:28.5	574232	6.35303E+12	5.47061E+13	5358.36	4.90E-06	-0.0275544	0.0731113	0.0001516	-0.8525331	2.2281334	2.2281334
59:31.3	574232	6.35303E+12	5.47061E+13	5369.47	4.90E-06	-0.025414	0.0732629	0.0001516	-0.7863092	2.2327532	2.2327532
04:34.2	574233	6.35303E+12	5.35475E+13	5382.49	0.0022439	-0.0254873	0.0750295	0.0694263	-0.7885771	2.2865921	2.2865921
09:37.0	574233	6.35303E+12	5.35475E+13	5358.81	0.0022439	-0.0031512	0.0746994	0.0694263	-0.0974981	2.2765324	2.2765324

14:39.6	574233	6.35303E+12	5.35475E+13	5359.15	0.0022439	-0.0011741	0.0747042	0.0694263	-0.0363267	2.2766768	2.2766768	
19:42.4	574233	6.35303E+12	5.35475E+13	5359.66	0.0022439	-0.0181019	0.0747113	0.0694263	-0.5600728	2.2768935	2.2768935	
24:45.0	574234	6.35303E+12	5.31615E+13	5358.18	0.0022439	-0.0021049	0.075233	0.0694263	-0.0651256	2.2927926	2.2927926	
29:47.7	574234	6.35303E+12	5.31615E+13	5351.99	0.0022439	-0.0142703	0.0751461	0.0694263	-0.4415231	2.2901439	2.2901439	
34:50.4	574234	6.35303E+12	5.31615E+13	5344.84	0.0022439	-0.003526	0.0750457	0.0694263	-0.1090944	2.2870844	2.2870844	
39:53.2	574236	6.35303E+12	5.29706E+13	5349.94	0.0022439	-0.0156274	0.075388	0.0694263	-0.4835118	2.2975179	2.2975179	
44:56.5	574237	6.35303E+12	5.26741E+13	5348.56	0.0022439	-0.0298903	0.0757929	0.0694263	-0.9248059	2.3098563	2.3098563	
49:59.5	574238	6.35303E+12	5.2719E+13	5357.05	0.0022439	-0.0286539	0.0758485	0.0694263	-0.8865517	2.3115503	2.3115503	
55:02.4	574238	6.35303E+12	5.2719E+13	5351.76	0.0022439	-0.00581	0.0757736	0.0694263	-0.1797614	2.3092677	2.3092677	
00:05.4	574239	6.35303E+12	5.28168E+13	5350.18	0.0110575	-0.0017958	0.0756109	0.342119	-0.0555621	2.3043114	2.3043114	
05:08.0	574239	6.35303E+12	5.28168E+13	5347.41	0.0110575	-0.0296719	0.0755718	0.342119	-0.9180486	2.3031184	2.3031184	
10:10.8	574240	6.35303E+12	5.25658E+13	5348.27	0.0110575	-0.0286608	0.0759448	0.342119	-0.8867652	2.314487	2.314487	
15:13.5	574243	6.35303E+12	5.35108E+13	5354.34	0.0110575	-0.0000324	0.0746884	0.342119	-0.0100246	2.2761958	2.2761958	
20:16.2	574245	6.35303E+12	5.38531E+13	5358.41	0.0110575	0.0006207	0.07427	0.342119	0.0192045	2.2634449	2.2634449	
25:18.9	574245	6.35303E+12	5.38531E+13	5356.02	0.0110575	-0.0034312	0.0742369	0.342119	-0.1061613	2.2624353	2.2624353	
30:21.7	574246	6.35303E+12	5.41667E+13	5359.34	0.0110575	-0.001958	0.0738528	0.342119	-0.0605805	2.2507317	2.2507317	
35:24.4	574246	6.35303E+12	5.41667E+13	5361.98	0.0110575	0.0041538	0.0738892	0.342119	0.1285186	2.2518404	2.2518404	
40:27.4	574246	6.35303E+12	5.41667E+13	5366.53	0.0110575	-0.0150598	0.0739519	0.342119	-0.4659502	2.2537513	2.2537513	
45:30.2	574248	6.35303E+12	5.41479E+13	5365.93	0.0110575	-0.0019635	0.0739693	0.342119	-0.0607507	2.2542821	2.2542821	
50:33.1	574251	6.35303E+12	5.52479E+13	5359.19	0.0110575	0.0009998	0.0724055	0.342119	0.0309338	2.2066234	2.2066234	
55:35.9	574251	6.35303E+12	5.52479E+13	5360.66	0.0110575	0.0009997	0.0724254	0.342119	0.0309307	2.2072286	2.2072286	
00:38.6	574252	6.35303E+12	5.50584E+13	5358.27	0.0155437	0.004066	0.0726423	0.4809221	0.125802	2.2138386	2.2138386	
05:43.2	574252	6.35303E+12	5.50584E+13	5360.85	0.0155437	0.1479624	0.0726772	0.4809221	4.5779567	2.2149045	4.5779567	
10:46.3	574253	6.35303E+12	5.55506E+13	5361.66	0.0155437	0.012018	0.0720441	0.4809221	0.3718369	2.1956089	2.1956089	
15:49.2	574255	6.35303E+12	5.5978E+13	5358.19	0.0155437	0.0085462	0.0714478	0.4809221	0.2644194	2.1774367	2.1774367	
20:52.2	574256	6.35303E+12	5.57331E+13	5364.52	0.0155437	0.0091729	0.0718465	0.4809221	0.2838095	2.1895872	2.1895872	
25:55.1	574257	6.35303E+12	5.59531E+13	5368.93	0.0155437	0.0070653	0.0716229	0.4809221	0.2186004	2.182771	2.182771	
30:57.9	574257	6.35303E+12	5.59531E+13	5369.93	0.0155437	0.0057038	0.0716362	0.4809221	0.1764756	2.1831776	2.1831776	
36:00.9	574257	6.35303E+12	5.59531E+13	5368.01	0.0155437	0.0056384	0.0716106	0.4809221	0.1744521	2.182397	2.182397	
41:04.6	574258	6.35303E+12	5.61961E+13	5363.48	0.0155437	0.0066693	0.0712408	0.4809221	0.2063481	2.1711281	2.1711281	
46:07.7	574258	6.35303E+12	5.61961E+13	5363.48	0.0155437	0.0064452	0.0712408	0.4809221	0.1994145	2.1711281	2.1711281	
51:10.7	574258	6.35303E+12	5.61961E+13	5363.48	0.0155437	0.006606	0.0712408	0.4809221	0.2043896	2.1711281	2.1711281	
56:17.1	574258	6.35303E+12	5.61961E+13	5368.91	0.0155437	0.0080226	0.0713129	0.4809221	0.2482192	2.1733261	2.1733261	
01:19.9	574258	6.35303E+12	5.61961E+13	5365.45	0.0157861	0.0085946	0.071267	0.4884219	0.2659169	2.1719255	2.1719255	
06:22.6	574258	6.35303E+12	5.61961E+13	5361.34	0.0157861	0.0124213	0.0712124	0.4884219	0.384315	2.1702618	2.1702618	
11:25.7	574259	6.35303E+12	5.4583E+13	5360.85	0.0157861	0.0100146	0.0733103	0.4884219	0.3098517	2.2341966	2.2341966	
16:28.4	574260	6.35303E+12	5.46276E+13	5368.73	0.0157861	0.007654	0.0733581	0.4884219	0.2368148	2.2356531	2.2356531	
21:31.1	574260	6.35303E+12	5.46276E+13	5368.72	0.0157861	0.0073542	0.0733579	0.4884219	0.2275389	2.2356489	2.2356489	
26:34.2	574260	6.35303E+12	5.46276E+13	5367.86	0.0157861	0.0065783	0.0733462	0.4884219	0.2035326	2.2352908	2.2352908	
31:37.2	574260	6.35303E+12	5.46276E+13	5369.51	0.0157861	0.0072755	0.0733687	0.4884219	0.225104	2.2359779	2.2359779	
36:43.9	574261	6.35303E+12	5.36607E+13	5367.41	0.0157861	0.0067775	0.0746615	0.4884219	0.2096959	2.2753756	2.2753756	
41:47.1	574261	6.35303E+12	5.36607E+13	5361.03	0.0157861	0.0075486	0.0745727	0.4884219	0.2335537	2.2726709	2.2726709	
46:49.9	574261	6.35303E+12	5.36607E+13	5363.23	0.0157861	0.007421	0.0746033	0.4884219	0.2296057	2.2736036	2.2736036	
51:52.9	574261	6.35303E+12	5.36607E+13	5367.99	0.0157861	0.0094254	0.0746695	0.4884219	0.2916219	2.2756214	2.2756214	
56:56.1	574262	6.35303E+12	5.24328E+13	5378.51	0.0157861	0.0074337	0.076568	0.4884219	0.2299987	2.3334773	2.3334773	
01:58.9	574266	6.35303E+12	5.51716E+13	5368.99	0.0175072	0.0070568	0.0726383	0.5416728	0.2183374	2.2137171	2.2137171	
07:01.5	574268	6.35303E+12	5.60115E+13	5366.55	0.0175072	0.0067409	0.0715165	0.5416728	0.2085634	2.1795291	2.1795291	

12:04.4	574269	6.35303E+12	5.58958E+13	5356.64	0.0175072	0.0075027	0.0715322	0.5416728	0.2321335	2.1800073	2.1800073
17:07.9	574270	6.35303E+12	5.6144E+13	5353.05	0.0175072	0.0070444	0.0711682	0.5416728	0.2179537	2.1689142	2.1689142
22:10.7	574271	6.35303E+12	5.6095E+13	5352.41	0.0175072	0.0068769	0.0712219	0.5416728	0.2127713	2.1705513	2.1705513
27:13.7	574271	6.35303E+12	5.6095E+13	5350.73	0.0175072	0.0068185	0.0711995	0.5416728	0.2109644	2.1698701	2.1698701
32:17.1	574271	6.35303E+12	5.6095E+13	5352.02	0.0175072	0.0070024	0.0712167	0.5416728	0.2166543	2.1703932	2.1703932
37:20.0	574273	6.35303E+12	5.53104E+13	5353.7	0.0175072	0.0074003	0.0722496	0.5416728	0.2289653	2.2018709	2.2018709
42:23.0	574273	6.35303E+12	5.53104E+13	5354.2	0.0175072	0.0093641	0.0722563	0.5416728	0.2897253	2.2020766	2.2020766
47:25.7	574274	6.35303E+12	5.53441E+13	5354.14	0.0175072	0.0106524	0.0722116	0.5416728	0.3295853	2.2007128	2.2007128
52:29.0	574274	6.35303E+12	5.53441E+13	5355.15	0.0175072	0.0155577	0.0722252	0.5416728	0.4813552	2.2011279	2.2011279
57:31.7	574274	6.35303E+12	5.53441E+13	5366.51	0.0175072	0.0134928	0.0723784	0.5416728	0.4174672	2.2057972	2.2057972
02:34.7	574274	6.35303E+12	5.53441E+13	5367.34	0.0201513	0.0088181	0.0723896	0.6234812	0.272832	2.2061384	2.2061384
07:37.6	574274	6.35303E+12	5.53441E+13	5369.11	0.0201513	0.0080448	0.0724135	0.6234812	0.2489061	2.2068659	2.2068659
12:40.5	574274	6.35303E+12	5.53441E+13	5361.12	0.0201513	0.0141938	0.0723057	0.6234812	0.4391562	2.2035818	2.2035818
17:43.1	574274	6.35303E+12	5.53441E+13	5366.11	0.0201513	0.0148287	0.072373	0.6234812	0.4588	2.2056328	2.2056328
22:45.8	574275	6.35303E+12	5.36343E+13	5369.98	0.0201513	0.0148955	0.0747339	0.6234812	0.4608668	2.2775843	2.2775843
27:48.5	574275	6.35303E+12	5.36343E+13	5368.01	0.0201513	0.0147788	0.0747065	0.6234812	0.4572561	2.2767487	2.2767487
32:51.2	574277	6.35303E+12	5.50501E+13	5373.94	0.0201513	0.0189124	0.0728657	0.6234812	0.5851497	2.2206488	2.2206488
37:54.0	574279	6.35303E+12	5.54528E+13	5377.71	0.0201513	0.0181814	0.0723873	0.6234812	0.5625325	2.2060669	2.2060669
42:56.7	574281	6.35303E+12	5.67946E+13	5384.52	0.0201513	0.016267	0.0707666	0.6234812	0.503301	2.1566766	2.1566766
47:59.4	574281	6.35303E+12	5.67946E+13	5380.73	0.0201513	0.0160892	0.0707168	0.6234812	0.4977998	2.1551586	2.1551586
53:02.7	574282	6.35303E+12	5.6096E+13	5375.54	0.0201513	0.0124623	0.0715284	0.6234812	0.3855836	2.1798939	2.1798939
58:06.1	574282	6.35303E+12	5.6096E+13	5378.27	0.0201513	0.0169571	0.0715648	0.6234812	0.5246527	2.1810009	2.1810009
03:10.1	574283	6.35303E+12	5.56063E+13	5389.1	0.0221974	0.0169284	0.0723403	0.6867876	0.5237647	2.2046367	2.2046367
08:13.3	574283	6.35303E+12	5.56063E+13	5401.6	0.0221974	0.0188882	0.0725081	0.6867876	0.5844009	2.2097504	2.2097504
13:16.5	574283	6.35303E+12	5.56063E+13	5411.61	0.0221974	0.0187623	0.0726425	0.6867876	0.5805056	2.2138454	2.2138454
18:19.3	574284	6.35303E+12	5.64188E+13	5399.02	0.0221974	0.0199987	0.0714298	0.6867876	0.6187598	2.1768876	2.1768876
23:22.1	574284	6.35303E+12	5.64188E+13	5401.6	0.0221974	0.0195923	0.0714639	0.6867876	0.6061858	2.1779279	2.1779279
28:25.0	574284	6.35303E+12	5.64188E+13	5405.99	0.0221974	0.0190804	0.071522	0.6867876	0.5903476	2.1796979	2.1796979
33:27.8	574285	6.35303E+12	5.57835E+13	5406.94	0.0221974	0.0194306	0.0723493	0.6867876	0.6011828	2.2049105	2.2049105
38:30.5	574285	6.35303E+12	5.57835E+13	5401.12	0.0221974	0.0186435	0.0722714	0.6867876	0.5768299	2.2025372	2.2025372
43:34.1	574285	6.35303E+12	5.57835E+13	5404.01	0.0221974	0.0194016	0.0723101	0.6867876	0.6002855	2.2037157	2.2037157
48:36.8	574285	6.35303E+12	5.57835E+13	5404.26	0.0221974	0.0191729	0.0723135	0.6867876	0.5932095	2.2038176	2.2038176
53:39.9	574285	6.35303E+12	5.57835E+13	5400.01	0.0221974	0.0194297	0.0722566	0.6867876	0.6011549	2.2020845	2.2020845
03:46.2	574285	6.35303E+12	5.57835E+13	5405.7	0.0234026	0.0195553	0.0723327	0.7240764	0.605041	2.2044049	2.2044049
08:49.1	574286	6.35303E+12	5.36818E+13	5416.95	0.0234026	0.0197148	0.0753209	0.7240764	0.6099759	2.2954736	2.2954736
13:52.7	574287	6.35303E+12	5.50908E+13	5406.6	0.0234026	0.0197013	0.0732543	0.7240764	0.6095582	2.2324921	2.2324921
18:55.9	574287	6.35303E+12	5.50908E+13	5394.62	0.0234026	0.0196918	0.073092	0.7240764	0.6092643	2.2275453	2.2275453
23:59.1	574288	6.35303E+12	5.6446E+13	5372.85	0.0234026	0.0197114	0.0710493	0.7240764	0.6098707	2.1652907	2.1652907
29:02.3	574288	6.35303E+12	5.6446E+13	5385.99	0.0234026	0.0197446	0.071223	0.7240764	0.6108979	2.1705862	2.1705862
34:05.2	574289	6.35303E+12	5.61643E+13	5382.26	0.0234026	0.0207871	0.0715308	0.7240764	0.6095582	2.1799641	2.1799641
39:08.3	574289	6.35303E+12	5.61643E+13	5380.01	0.0234026	0.0209181	0.0715009	0.7240764	0.647206	2.1790528	2.1790528
44:11.8	574289	6.35303E+12	5.61643E+13	5375.01	0.0234026	0.0204072	0.0714344	0.7240764	0.6313988	2.1770277	2.1770277
49:15.0	574290	6.35303E+12	5.56905E+13	5379.99	0.0234026	0.020967	0.0721089	0.7240764	0.648719	2.1975834	2.1975834
54:18.0	574292	6.35303E+12	5.59818E+13	5380.19	0.0234026	0.0210779	0.0717363	0.7240764	0.6521502	2.1862275	2.1862275
59:20.8	574293	6.35303E+12	5.63654E+13	5377.35	0.0234026	0.0210797	0.0712105	0.7240764	0.6522059	2.1702049	2.1702049
09:26.9	574295	6.35303E+12	5.71185E+13	5388.44	0.024677	0.0208048	0.0704165	0.7635064	0.6437005	2.1460054	2.1460054
14:29.9	574298	6.35303E+12	5.77593E+13	5389.19	0.024677	0.0209776	0.0696449	0.7635064	0.6490469	2.122492	2.122492

19:32.9	574298	6.35303E+12	5.77593E+13	5388.39	0.024677	0.0233134	0.0696346	0.7635064	0.7213166	2.122177	2.122177	2.122177
24:36.5	574298	6.35303E+12	5.77593E+13	5391.23	0.024677	0.0216334	0.0696713	0.7635064	0.6693374	2.1232955	2.1232955	2.1232955
29:39.5	574298	6.35303E+12	5.77593E+13	5399.68	0.024677	0.0249963	0.0697805	0.7635064	0.7733855	2.1266234	2.1266234	2.1266234
34:42.6	574300	6.35303E+12	5.74492E+13	5391.27	0.024677	0.02573	0.0700479	0.7635064	0.7960862	2.1347724	2.1347724	2.1347724
39:48.1	574301	6.35303E+12	5.7613E+13	5391.51	0.024677	0.0821753	0.0698519	0.7635064	2.5425038	2.1287995	2.5425038	2.5425038
44:52.1	574302	6.35303E+12	5.77583E+13	5394.15	0.024677	0.2145119	0.0697103	0.7635064	6.6369982	2.124483	6.6369982	6.6369982
49:55.9	574302	6.35303E+12	5.77583E+13	5395.41	0.024677	0.1523162	0.0697265	0.7635064	4.7126632	2.1249792	4.7126632	4.7126632
54:59.6	574304	6.35303E+12	5.7411E+13	5395.02	0.024677	0.1730318	0.0701433	0.7635064	5.3536039	2.1376815	5.3536039	5.3536039
00:04.8	574305	6.35303E+12	5.8471E+13	5392.07	0.0272334	0.1708133	0.068834	0.8426014	5.2849635	2.0977787	5.2849635	5.2849635
05:08.7	574305	6.35303E+12	5.8471E+13	5393.61	0.0272334	0.2130182	0.0688537	0.8426014	6.5907831	2.0983778	6.5907831	6.5907831
10:11.7	574305	6.35303E+12	5.8471E+13	5393.59	0.0272334	0.03673	0.0688534	0.8426014	1.1364262	2.09837	2.09837	2.09837
20:17.3	574309	6.35303E+12	6.00748E+13	5397.01	0.0272334	0.0252878	0.0670578	0.8426014	0.7824045	2.0436461	2.0436461	2.0436461
25:20.4	574309	6.35303E+12	6.00748E+13	5396.19	0.0272334	0.02513	0.0670476	0.8426014	0.7775222	2.0433356	2.0433356	2.0433356
30:23.2	574310	6.35303E+12	6.02983E+13	5397.48	0.0272334	0.029264	0.0668151	0.8426014	0.9054282	2.0362495	2.0362495	2.0362495
35:25.9	574311	6.35303E+12	6.01255E+13	5402.84	0.0272334	0.0292724	0.0670736	0.8426014	0.9056881	2.044127	2.044127	2.044127
40:29.3	574312	6.35303E+12	5.99055E+13	5397.41	0.0272334	0.0293249	0.0672522	0.8426014	0.9073124	2.0495721	2.0495721	2.0495721
45:32.2	574312	6.35303E+12	5.99055E+13	5395.01	0.0272334	0.0252257	0.0672223	0.8426014	0.7804832	2.0486608	2.0486608	2.0486608
50:35.3	574314	6.35303E+12	5.98595E+13	5392.41	0.0272334	0.02791	0.0672416	0.8426014	0.8635354	2.0492469	2.0492469	2.0492469
55:38.1	574315	6.35303E+12	5.97623E+13	5391.82	0.0272334	0.025482	0.0673436	0.8426014	0.7884131	2.0523565	2.0523565	2.0523565
00:42.4	574315	6.35303E+12	5.97623E+13	5387.9	0.0290471	0.2072917	0.0672946	0.8987173	6.4136052	2.0508644	6.4136052	6.4136052
05:45.3	574317	6.35303E+12	6.04051E+13	5388.49	0.0290471	0.0266619	0.0665859	0.8987173	0.8249192	2.0292641	2.0292641	2.0292641
10:49.2	574319	6.35303E+12	6.0775E+13	5387.98	0.0290471	0.2202776	0.0661742	0.8987173	6.8153889	2.0167195	6.8153889	6.8153889
20:54.5	574320	6.35303E+12	6.21737E+13	5399.05	0.0290471	0.0363805	0.0648185	0.8987173	1.1256127	1.9754023	1.9754023	1.9754023
25:57.3	574320	6.35303E+12	6.21737E+13	5405.74	0.0290471	0.0298668	0.0648988	0.8987173	0.9240788	1.97785	1.97785	1.97785
31:00.3	574321	6.35303E+12	6.17749E+13	5405.41	0.0290471	0.027565	0.0653138	0.8987173	0.8528611	1.9904973	1.9904973	1.9904973
36:03.1	574321	6.35303E+12	6.17749E+13	5401.49	0.0290471	0.0274552	0.0652665	0.8987173	0.8494639	1.9890538	1.9890538	1.9890538
41:06.0	574321	6.35303E+12	6.17749E+13	5409.99	0.0290471	0.0270176	0.0653692	0.8987173	0.8359245	1.9921839	1.9921839	1.9921839
46:08.7	574321	6.35303E+12	6.17749E+13	5408.8	0.0290471	0.0271924	0.0653548	0.8987173	0.8413329	1.9917457	1.9917457	1.9917457
51:11.6	574321	6.35303E+12	6.17749E+13	5412.57	0.0290471	0.0272177	0.0654003	0.8987173	0.8421156	1.9931339	1.9931339	1.9931339
56:14.3	574321	6.35303E+12	6.17749E+13	5407.34	0.0290471	0.0261354	0.0653371	0.8987173	0.8086293	1.991208	1.991208	1.991208
01:17.2	574321	6.35303E+12	6.17749E+13	5400.73	0.0285414	0.0261745	0.0652573	0.8830709	0.809839	1.9887739	1.9887739	1.9887739
06:20.9	574321	6.35303E+12	6.17749E+13	5395.3	0.0285414	0.0262962	0.0651917	0.8830709	0.8136044	1.9867744	1.9867744	1.9867744
11:24.4	574321	6.35303E+12	6.17749E+13	5397.81	0.0285414	0.0260871	0.065222	0.8830709	0.8071349	1.9876987	1.9876987	1.9876987
16:27.4	574321	6.35303E+12	6.17749E+13	5397.93	0.0285414	0.026146	0.0652234	0.8830709	0.8089572	1.9877429	1.9877429	1.9877429
21:30.3	574321	6.35303E+12	6.17749E+13	5392.62	0.0285414	0.0262574	0.0651593	0.8830709	0.812404	1.9857875	1.9857875	1.9857875
26:33.0	574321	6.35303E+12	6.17749E+13	5393.89	0.0285414	0.0261514	0.0651746	0.8830709	0.8091243	1.9862552	1.9862552	1.9862552
31:35.8	574322	6.35303E+12	5.8824E+13	5396.27	0.0285414	0.0261091	0.0684743	0.8830709	0.8078156	2.0868162	2.0868162	2.0868162
36:38.8	574322	6.35303E+12	5.8824E+13	5393.1	0.0285414	0.0254329	0.0684341	0.8830709	0.7868939	2.0855903	2.0855903	2.0855903
41:41.8	574322	6.35303E+12	5.8824E+13	5393.7	0.0285414	0.0267382	0.0684417	0.8830709	0.8272799	2.0858223	2.0858223	2.0858223
46:44.7	574323	6.35303E+12	5.85421E+13	5398.48	0.0285414	0.0260142	0.0688322	0.8830709	0.8048793	2.0977221	2.0977221	2.0977221
51:47.6	574323	6.35303E+12	5.85421E+13	5406.39	0.0285414	0.0268842	0.068933	0.8830709	0.8317971	2.1007958	2.1007958	2.1007958
56:50.6	574324	6.35303E+12	5.81584E+13	5403.98	0.0285414	0.0295804	0.0693569	0.8830709	0.9152176	2.1137127	2.1137127	2.1137127
01:53.4	574326	6.35303E+12	5.98016E+13	5406.62	0.029578	0.0350032	0.0674841	0.9151433	1.082999	2.0566378	2.0566378	2.0566378
06:56.4	574326	6.35303E+12	5.98016E+13	5402.77	0.029578	0.028005	0.067436	0.9151433	0.8664747	2.0551733	2.0551733	2.0551733
11:59.3	574327	6.35303E+12	5.96067E+13	5401.77	0.029578	0.0268725	0.067644	0.9151433	0.8314352	2.0615104	2.0615104	2.0615104
17:02.0	574327	6.35303E+12	5.96067E+13	5403.81	0.029578	0.0251518	0.0676695	0.9151433	0.7781967	2.0622889	2.0622889	2.0622889
22:04.9	574328	6.35303E+12	5.96752E+13	5405.43	0.029578	0.0265695	0.0676122	0.9151433	0.8220603	2.0605413	2.0605413	2.0605413

27:08.1	574328	6.35303E+12	5.96752E+13	5405.62	0.029578	0.0263765	0.0676145	0.9151433	0.8160889	2.0606137	2.0606137
32:11.0	574329	6.35303E+12	5.94855E+13	5414.16	0.029578	0.0265315	0.0679373	0.9151433	0.8208846	2.0704516	2.0704516
37:14.1	574330	6.35303E+12	5.97035E+13	5414.16	0.029578	0.0264993	0.0676893	0.9151433	0.8198883	2.0628912	2.0628912
52:22.4	574333	6.35303E+12	5.9734E+13	5406.27	0.029578	0.0263688	0.0675561	0.9151433	0.8158507	2.0588333	2.0588333
02:28.0	574334	6.35303E+12	5.92562E+13	5400.02	0.028458	0.0275794	0.0680221	0.8804905	0.8533066	2.0730351	2.0730351
07:31.0	574335	6.35303E+12	5.9018E+13	5400.05	0.028458	0.0264065	0.068297	0.8804905	0.8170171	2.0814126	2.0814126
12:34.3	574337	6.35303E+12	6.04407E+13	5403.81	0.028458	0.0264328	0.0667358	0.8804905	0.8178308	2.0338321	2.0338321
17:37.3	574338	6.35303E+12	6.00814E+13	5403.9	0.028458	0.0262088	0.067136	0.8804905	0.8109003	2.0460298	2.0460298
22:40.4	574340	6.35303E+12	6.01388E+13	5404.53	0.028458	0.0258082	0.0670798	0.8804905	0.7985057	2.0443159	2.0443159
27:43.7	574342	6.35303E+12	6.0482E+13	5405.01	0.028458	0.0262698	0.066705	0.8804905	0.8127876	2.0328944	2.0328944
32:46.8	574342	6.35303E+12	6.0482E+13	5405.02	0.028458	0.0252935	0.0667051	0.8804905	0.7825809	2.0328982	2.0328982
37:49.9	574343	6.35303E+12	5.99395E+13	5399.97	0.028458	0.02589	0.067246	0.8804905	0.8010366	2.0493813	2.0493813
42:52.7	574344	6.35303E+12	5.95861E+13	5399.01	0.028458	0.0257766	0.0676328	0.8804905	0.797528	2.0611697	2.0611697
47:55.6	574344	6.35303E+12	5.95861E+13	5399.01	0.028458	0.0264346	0.0676328	0.8804905	0.8178865	2.0611697	2.0611697
58:00.7	574344	6.35303E+12	5.95861E+13	5398.35	0.028458	0.0259627	0.0676245	0.8804905	0.8032859	2.0609177	2.0609177
03:05.1	574346	6.35303E+12	5.84022E+13	5395.14	0.0276119	0.2213191	0.0689544	0.8543122	6.847613	2.1014468	6.847613
08:08.7	574347	6.35303E+12	5.86008E+13	5392.22	0.0276119	0.0261815	0.0686835	0.8543122	0.8100556	2.0931918	2.0931918
23:17.2	574348	6.35303E+12	5.87322E+13	5396.18	0.0276119	0.0261474	0.0685802	0.8543122	0.8090006	2.0900429	2.0900429
28:21.2	574349	6.35303E+12	5.84595E+13	5396.23	0.0276119	0.220695	0.0689007	0.8543122	6.8283033	2.0998095	6.8283033
33:24.2	574349	6.35303E+12	5.84595E+13	5395.06	0.0276119	0.0357404	0.0688857	0.8543122	1.105808	2.0993542	2.0993542
38:27.1	574350	6.35303E+12	5.91267E+13	5395.03	0.0276119	0.0265231	0.0681081	0.8543122	0.8206247	2.0756546	2.0756546
43:30.0	574351	6.35303E+12	5.92508E+13	5395.02	0.0276119	0.024313	0.0679653	0.8543122	0.7522442	2.071303	2.071303
48:32.9	574351	6.35303E+12	5.92508E+13	5394.15	0.0276119	0.0250697	0.0679543	0.8543122	0.7756565	2.070969	2.070969
53:35.7	574351	6.35303E+12	5.92508E+13	5390.52	0.0276119	0.0242897	0.0679086	0.8543122	0.7515233	2.0695753	2.0695753
58:38.6	574351	6.35303E+12	5.92508E+13	5391.4	0.0276119	0.0244875	0.0679197	0.8543122	0.7576432	2.0699132	2.0699132
03:41.5	574351	6.35303E+12	5.92508E+13	5383.02	0.0288024	0.0245448	0.0678141	0.8911463	0.7594161	2.0666958	2.0666958
08:44.3	574351	6.35303E+12	5.92508E+13	5371.99	0.0288024	0.0220851	0.0676752	0.8911463	0.683313	2.0624611	2.0624611
13:47.2	574351	6.35303E+12	5.92508E+13	5376.84	0.0288024	0.0221515	0.0677362	0.8911463	0.6853674	2.0643232	2.0643232
18:50.0	574353	6.35303E+12	5.95341E+13	5372.72	0.0288024	0.0237019	0.0673622	0.8911463	0.7333368	2.0529247	2.0529247
23:53.2	574353	6.35303E+12	5.95341E+13	5379.06	0.0288024	0.0224086	0.0674417	0.8911463	0.6933221	2.0553472	2.0553472
28:56.2	574353	6.35303E+12	5.95341E+13	5386.27	0.0288024	0.0242596	0.0675321	0.8911463	0.750592	2.0581021	2.0581021
33:59.0	574353	6.35303E+12	5.95341E+13	5393.51	0.0288024	0.0246517	0.0676229	0.8911463	0.7627236	2.0608686	2.0608686
39:01.9	574353	6.35303E+12	5.95341E+13	5397.98	0.0288024	0.024574	0.0676789	0.8911463	0.7603196	2.0625766	2.0625766
44:04.8	574354	6.35303E+12	5.92005E+13	5401.73	0.0288024	0.024264	0.0681077	0.8911463	0.7507282	2.0756429	2.0756429
49:08.5	574356	6.35303E+12	6.01278E+13	5395.44	0.0288024	0.0227333	0.0669792	0.8911463	0.7033683	2.0412523	2.0412523
54:11.6	574356	6.35303E+12	6.01278E+13	5400.19	0.0288024	0.0241575	0.0670382	0.8911463	0.7474331	2.0430494	2.0430494
59:14.8	574357	6.35303E+12	5.98782E+13	5407.34	0.0288024	0.0213869	0.0674068	0.8911463	0.6617107	2.054282	2.054282
04:17.8	574357	6.35303E+12	5.98782E+13	5412.65	0.0349955	0.0212221	0.067473	1.0827608	0.6566118	2.0562993	2.0562993
09:21.0	574358	6.35303E+12	5.94067E+13	5412.99	0.0349955	0.0210166	0.0680127	1.0827608	0.6502536	2.0727494	2.0727494
14:24.8	574359	6.35303E+12	5.99023E+13	5410.59	0.0349955	0.0212588	0.0674202	1.0827608	0.6577473	2.0546898	2.0546898
24:31.9	574360	6.35303E+12	6.0023E+13	5404.27	0.0349955	0.0221652	0.0672059	1.0827608	0.6857913	2.0481598	2.0481598
29:35.1	574361	6.35303E+12	5.95038E+13	5406.99	0.0349955	0.0219022	0.0678264	1.0827608	0.6776541	2.0670711	2.0670711
34:38.4	574361	6.35303E+12	5.95038E+13	5410.01	0.0349955	0.0238654	0.0678643	1.0827608	0.7383955	2.0682256	2.0682256
39:41.8	574361	6.35303E+12	5.95038E+13	5424.76	0.0349955	0.0349014	0.0680493	1.0827608	1.0798493	2.0738645	2.0738645
44:45.3	574362	6.35303E+12	5.87448E+13	5432.99	0.0349955	0.0231509	0.0690331	1.0827608	0.7162888	2.1038472	2.1038472
49:48.4	574362	6.35303E+12	5.87448E+13	5431.52	0.0349955	0.0217775	0.0690145	1.0827608	0.6737959	2.103278	2.103278
54:51.6	574363	6.35303E+12	5.80502E+13	5426.35	0.0349955	0.0233238	0.0697738	1.0827608	0.7216384	2.1264208	2.1264208

59:54.6	574363	6.35303E+12	5.80502E+13	5426.04	0.0349955	0.0316189	0.0697699	1.0827608	0.9782888	2.1262994	2.1262994
10:00.2	574364	6.35303E+12	5.78645E+13	5442.45	0.026266	0.0418451	0.0702054	0.81267	1.2946874	2.1395736	2.1395736
20:06.7	574367	6.35303E+12	5.84533E+13	5443.24	0.026266	0.0238876	0.0695083	0.81267	0.7390823	2.1183292	2.1183292
25:10.0	574368	6.35303E+12	5.81378E+13	5430.99	0.026266	0.0224401	0.0697283	0.81267	0.6942967	2.125032	2.125032
30:13.1	574368	6.35303E+12	5.81378E+13	5447.49	0.026266	0.0208024	0.0699401	0.81267	0.6436263	2.1314881	2.1314881
35:16.2	574369	6.35303E+12	5.7527E+13	5441.28	0.026266	0.0204883	0.0706021	0.81267	0.633908	2.151664	2.151664
40:20.4	574369	6.35303E+12	5.7527E+13	5444.99	0.026266	0.0193386	0.0706503	0.81267	0.5983363	2.153131	2.153131
45:23.4	574370	6.35303E+12	5.73316E+13	5445.99	0.026266	0.0193386	0.0709041	0.81267	0.5983363	2.1608665	2.1608665
50:26.5	574370	6.35303E+12	5.73316E+13	5466.65	0.026266	0.0188979	0.0711731	0.81267	0.584701	2.169064	2.169064
55:29.5	574372	6.35303E+12	5.7029E+13	5473.18	0.026266	0.0188979	0.0716362	0.81267	0.584701	2.1831762	2.1831762
00:32.4	574373	6.35303E+12	5.75391E+13	5470.2	0.0201854	0.0187891	0.0709624	0.6245363	0.5813348	2.1626439	2.1626439
05:35.4	574373	6.35303E+12	5.75391E+13	5471.01	0.0201854	0.0185387	0.0709729	0.6245363	0.5735874	2.1629641	2.1629641
15:40.8	574374	6.35303E+12	5.70787E+13	5460.95	0.0201854	0.0185472	0.0714138	0.6245363	0.5738504	2.1764008	2.1764008
25:46.4	574376	6.35303E+12	5.68162E+13	5458.6	0.0201854	0.0186796	0.0717129	0.6245363	0.5779468	2.1855137	2.1855137
35:51.9	574377	6.35303E+12	5.63276E+13	5460.02	0.0201854	0.0210142	0.0723538	0.6245363	0.6501793	2.2050485	2.2050485
40:54.8	574377	6.35303E+12	5.63276E+13	5466.78	0.0201854	0.0203564	0.0724434	0.6245363	0.629827	2.2077785	2.2077785
45:57.7	574378	6.35303E+12	5.65074E+13	5473.24	0.0201854	0.0203336	0.0722982	0.6245363	0.6291216	2.2033529	2.2033529
51:01.0	574378	6.35303E+12	5.65074E+13	5471.65	0.0201854	0.0199115	0.0722772	0.6245363	0.6160618	2.2027129	2.2027129
56:04.1	574378	6.35303E+12	5.65074E+13	5469.64	0.0201854	0.0188807	0.0722507	0.6245363	0.5841689	2.2019037	2.2019037
01:36.7	574383	6.35303E+12	5.72964E+13	5478.36	0.017735	0.0180056	0.0713693	0.5487209	0.5570933	2.1750424	2.1750424
06:39.8	574384	6.35303E+12	5.65611E+13	5470.62	0.017735	0.0179751	0.072195	0.5487209	0.5561496	2.2002079	2.2002079
11:42.7	574384	6.35303E+12	5.65611E+13	5479.43	0.017735	0.018023	0.0723113	0.5487209	0.5576316	2.2037511	2.2037511
16:45.6	574384	6.35303E+12	5.65611E+13	5474.09	0.017735	0.0177163	0.0722408	0.5487209	0.5481423	2.2016035	2.2016035
21:48.3	574384	6.35303E+12	5.65611E+13	5484.78	0.017735	0.0175711	0.0723819	0.5487209	0.5436498	2.2059028	2.2059028
26:51.4	574384	6.35303E+12	5.65611E+13	5487.23	0.017735	0.0172277	0.0724142	0.5487209	0.533025	2.2068882	2.2068882
31:54.2	574385	6.35303E+12	5.52675E+13	5489.21	0.017735	0.0175138	0.0741359	0.5487209	0.541877	2.2593577	2.2593577
36:57.2	574386	6.35303E+12	5.5002E+13	5489.86	0.017735	0.0178899	0.0745026	0.5487209	0.5535135	2.2705332	2.2705332
47:03.0	574387	6.35303E+12	5.4816E+13	5496.27	0.017735	0.0176629	0.0748427	0.5487209	0.5464901	2.2808975	2.2808975
52:06.0	574387	6.35303E+12	5.4816E+13	5491.99	0.017735	0.0176411	0.0747844	0.5487209	0.5458156	2.2791214	2.2791214
57:08.7	574388	6.35303E+12	5.41076E+13	5492.11	0.017735	0.0176457	0.0757651	0.5487209	0.545958	2.3090086	2.3090086
02:11.8	574388	6.35303E+12	5.41076E+13	5492.89	0.0168293	0.0176283	0.0757758	0.5206985	0.5454196	2.3093366	2.3093366
07:15.3	574388	6.35303E+12	5.41076E+13	5495.29	0.0168293	0.0176447	0.0758089	0.5206985	0.545927	2.3103456	2.3103456
12:18.3	574389	6.35303E+12	5.34819E+13	5494.94	0.0168293	0.0176619	0.076691	0.5206985	0.5464592	2.3372263	2.3372263
17:21.0	574392	6.35303E+12	5.44667E+13	5498.94	0.0168293	0.0181464	0.0753591	0.5206985	0.5614496	2.2966372	2.2966372
22:23.8	574393	6.35303E+12	5.4543E+13	5516.61	0.0168293	0.0186975	0.0754956	0.5206985	0.5785006	2.3007978	2.3007978
27:27.0	574393	6.35303E+12	5.4543E+13	5541.73	0.0168293	0.0186527	0.0758394	0.5206985	0.5771145	2.3112745	2.3112745
32:29.9	574393	6.35303E+12	5.4543E+13	5543.62	0.0168293	0.0188333	0.0758653	0.5206985	0.5827023	2.3120627	2.3120627
37:33.5	574394	6.35303E+12	5.38779E+13	5540.34	0.0168293	0.0187852	0.0767563	0.5206985	0.5812141	2.3392162	2.3392162
42:36.4	574394	6.35303E+12	5.38779E+13	5499.34	0.0168293	0.0191027	0.0761882	0.5206985	0.5910375	2.3219053	2.3219053
47:39.2	574395	6.35303E+12	5.53825E+13	5524.89	0.0168293	0.0188485	0.0744629	0.5206985	0.5831726	2.2693225	2.2693225
52:42.0	574395	6.35303E+12	5.53825E+13	5516.19	0.0168293	0.0188647	0.0743456	0.5206985	0.5836738	2.265749	2.265749
57:44.9	574395	6.35303E+12	5.53825E+13	5519.38	0.0168293	0.0185184	0.0743886	0.5206985	0.5729593	2.2670593	2.2670593
02:47.9	574395	6.35303E+12	5.53825E+13	5528.44	0.0175068	0.0184732	0.0745107	0.5416604	0.5715608	2.2707806	2.2707806
07:50.8	574395	6.35303E+12	5.53825E+13	5533.27	0.0175068	0.0184058	0.0745758	0.5416604	0.5694755	2.2727645	2.2727645
12:53.8	574396	6.35303E+12	5.44713E+13	5531.02	0.0175068	0.0182413	0.0757925	0.5416604	0.5643858	2.3098433	2.3098433
17:56.8	574396	6.35303E+12	5.44713E+13	5545.02	0.0175068	0.0181908	0.0759843	0.5416604	0.5628234	2.3156899	2.3156899
22:59.7	574396	6.35303E+12	5.44713E+13	5547.84	0.0175068	0.018208	0.0760229	0.5416604	0.5633555	2.3168676	2.3168676

28:03.3	574397	6.35303E+12	5.38389E+13	5554.01	0.0175068	0.0183035	0.0770014	0.5416604	0.5663103	2.3466856	2.3466856
33:06.2	574397	6.35303E+12	5.38389E+13	5549.85	0.0175068	0.0179475	0.0769437	0.5416604	0.5552957	2.3449279	2.3449279
38:09.0	574397	6.35303E+12	5.38389E+13	5562.7	0.0175068	0.0181763	0.0771218	0.5416604	0.5623747	2.3503573	2.3503573
43:11.9	574397	6.35303E+12	5.38389E+13	5576.66	0.0175068	0.0180946	0.0773154	0.5416604	0.5598469	2.3562557	2.3562557
48:15.5	574397	6.35303E+12	5.38389E+13	5591.65	0.0175068	0.0182001	0.0775232	0.5416604	0.5631111	2.3625893	2.3625893
53:18.6	574397	6.35303E+12	5.38389E+13	5576.07	0.0175068	0.0186904	0.0773072	0.5416604	0.578281	2.3560064	2.3560064
58:21.9	574398	6.35303E+12	5.24135E+13	5579.93	0.0175068	0.0187504	0.0794646	0.5416604	0.5801374	2.4217554	2.4217554
03:24.7	574399	6.35303E+12	5.22154E+13	5582.01	0.0177324	0.0190536	0.0797958	0.5486405	0.5895184	2.431849	2.431849
08:28.1	574399	6.35303E+12	5.22154E+13	5562.69	0.0177324	0.0191988	0.0795196	0.5486405	0.5940109	2.4234321	2.4234321
13:30.8	574400	6.35303E+12	5.19602E+13	5575.84	0.0177324	0.0190126	0.0800991	0.5486405	0.5882498	2.441092	2.441092
18:33.6	574400	6.35303E+12	5.19602E+13	5579.19	0.0177324	0.019119	0.0801472	0.5486405	0.5915419	2.4425586	2.4425586
23:36.6	574401	6.35303E+12	5.14241E+13	5571.19	0.0177324	0.01914	0.0808667	0.5486405	0.5921916	2.4644852	2.4644852
28:39.9	574401	6.35303E+12	5.14241E+13	5570.27	0.0177324	0.0192996	0.0808533	0.5486405	0.5971296	2.4640783	2.4640783
33:43.3	574402	6.35303E+12	5.15991E+13	5576.77	0.0177324	0.0192744	0.0806731	0.5486405	0.5963499	2.458585	2.458585
38:46.1	574403	6.35303E+12	5.16659E+13	5613.91	0.0177324	0.0199884	0.0811054	0.5486405	0.6184411	2.4717605	2.4717605
43:49.0	574404	6.35303E+12	5.22163E+13	5628.79	0.0177324	0.0195167	0.0804633	0.5486405	0.6038467	2.45219	2.45219
48:51.9	574405	6.35303E+12	5.26766E+13	5629.74	0.0177324	0.0214372	0.0797736	0.5486405	0.663267	2.4311707	2.4311707
53:54.6	574406	6.35303E+12	5.44332E+13	5687.49	0.0177324	0.0195852	0.077991	0.5486405	0.6059661	2.3768473	2.3768473
58:57.5	574407	6.35303E+12	5.44179E+13	5665.95	0.0177324	0.0195061	0.0777176	0.5486405	0.6035187	2.3685147	2.3685147
04:00.3	574407	6.35303E+12	5.44179E+13	5670.39	0.0185341	0.0184448	0.0777785	0.5734451	0.5706821	2.3703707	2.3703707
09:03.2	574408	6.35303E+12	5.43366E+13	5671.73	0.0185341	0.0190636	0.0779133	0.5734451	0.5898278	2.3744772	2.3744772
14:06.4	574409	6.35303E+12	5.45039E+13	5709.88	0.0185341	0.0193304	0.0781965	0.5734451	0.5980826	2.3831101	2.3831101
19:09.3	574409	6.35303E+12	5.45039E+13	5681.29	0.0185341	0.0195839	0.077805	0.5734451	0.6059259	2.3711776	2.3711776
24:12.6	574409	6.35303E+12	5.45039E+13	5681.4	0.0185341	0.021853	0.0778065	0.5734451	0.6761318	2.3712235	2.3712235
29:16.5	574410	6.35303E+12	5.4739E+13	5706.78	0.0185341	0.0200612	0.0778185	0.5734451	0.6206935	2.3715874	2.3715874
34:19.5	574410	6.35303E+12	5.4739E+13	5723.04	0.0185341	0.0209275	0.0780402	0.5734451	0.6474969	2.3783446	2.3783446
39:22.8	574410	6.35303E+12	5.4739E+13	5712.44	0.0185341	0.0210112	0.0778956	0.5734451	0.6500865	2.3739395	2.3739395
44:26.3	574410	6.35303E+12	5.4739E+13	5766.56	0.0185341	0.0207384	0.0786336	0.5734451	0.6416461	2.3964304	2.3964304
49:29.4	574410	6.35303E+12	5.4739E+13	5752.64	0.0185341	0.0222079	0.0784438	0.5734451	0.6871124	2.3906456	2.3906456
54:32.5	574411	6.35303E+12	5.33843E+13	5785.23	0.0185341	0.0227025	0.0808902	0.5734451	0.7024153	2.4652002	2.4652002
59:35.5	574412	6.35303E+12	5.33495E+13	5778.03	0.0185341	0.0428589	0.0808422	0.5734451	1.3260544	2.4637378	2.4637378
04:38.4	574412	6.35303E+12	5.33495E+13	5707.59	0.0231547	0.0241354	0.0798566	0.7164064	0.7467493	2.4337024	2.4337024
09:41.5	574412	6.35303E+12	5.33495E+13	5698.98	0.0231547	0.0216243	0.0797362	0.7164064	0.6690558	2.4300311	2.4300311
14:44.4	574412	6.35303E+12	5.33495E+13	5716.84	0.0231547	0.0224334	0.079986	0.7164064	0.6940894	2.4376465	2.4376465
19:47.4	574413	6.35303E+12	5.25253E+13	5727.04	0.0231547	0.0226368	0.081386	0.7164064	0.7003826	2.4803111	2.4803111
24:50.2	574413	6.35303E+12	5.25253E+13	5727.44	0.0231547	0.0213798	0.0813917	0.7164064	0.661491	2.4804844	2.4804844
29:53.5	574413	6.35303E+12	5.25253E+13	5735.97	0.0231547	0.0246145	0.0815129	0.7164064	0.7615726	2.4841786	2.4841786
34:56.2	574414	6.35303E+12	5.19701E+13	5739.52	0.0231547	0.0244526	0.0824347	0.7164064	0.7565634	2.5122723	2.5122723
39:58.9	574415	6.35303E+12	5.18073E+13	5733.01	0.0231547	0.0247503	0.0826	0.7164064	0.7657743	2.5173089	2.5173089
45:02.0	574418	6.35303E+12	5.19586E+13	5730.9	0.0231547	0.0246666	0.0823292	0.7164064	0.7631846	2.5090566	2.5090566
50:05.4	574420	6.35303E+12	5.25895E+13	5722.12	0.0231547	0.0217518	0.0812169	0.7164064	0.6730007	2.4751591	2.4751591
55:08.3	574421	6.35303E+12	5.25734E+13	5697.57	0.0231547	0.0351625	0.0808932	0.7164064	1.0879278	2.4652918	2.4652918
00:11.2	574421	6.35303E+12	5.25734E+13	5674.99	0.0262502	0.0227664	0.0805726	0.8121812	0.7043924	2.4555216	2.4555216
05:14.1	574423	6.35303E+12	5.29406E+13	5662.61	0.0262502	0.0211763	0.0798392	0.8121812	0.6551947	2.4331701	2.4331701
10:17.1	574424	6.35303E+12	5.28202E+13	5700.01	0.0262502	0.0212464	0.0805497	0.8121812	0.6573636	2.4548241	2.4548241
15:20.3	574424	6.35303E+12	5.28202E+13	5679.07	0.0262502	0.0274053	0.0802538	0.8121812	0.84792	2.4458059	2.4458059
20:23.5	574425	6.35303E+12	5.23532E+13	5686.98	0.0262502	0.0470867	0.0810825	0.8121812	1.4568625	2.471061	2.471061

25:27.5	574426	6.35303E+12	5.30049E+13	5674.69	0.0262502	0.2292147	0.0799125	0.8121812	7.0919028	2.435404	7.0919028
30:31.9	574427	6.35303E+12	5.28466E+13	5692.52	0.0262502	0.2216174	0.0804036	0.8121812	6.8568424	2.4503724	6.8568424
35:34.7	574427	6.35303E+12	5.28466E+13	5694.01	0.0262502	0.0471417	0.0804247	0.8121812	1.4585642	2.4510138	2.4510138
40:37.2	574428	6.35303E+12	5.2354E+13	5713.35	0.0262502	0.026834	0.0814571	0.8121812	0.8302244	2.4824794	2.4824794
45:39.9	574428	6.35303E+12	5.2354E+13	5716.19	0.0262502	0.0271429	0.0814976	0.8121812	0.8398013	2.4837134	2.4837134
50:43.0	574428	6.35303E+12	5.2354E+13	5717.38	0.0262502	0.0274218	0.0815146	0.8121812	0.8484305	2.4842305	2.4842305
55:46.3	574429	6.35303E+12	5.15634E+13	5710.01	0.0262502	0.0231901	0.0826578	0.8121812	0.7175017	2.5190709	2.5190709
00:48.9	574429	6.35303E+12	5.15634E+13	5698.38	0.026897	0.0217524	0.0824894	0.8321932	0.6730193	2.5139401	2.5139401
05:51.7	574429	6.35303E+12	5.15634E+13	5709.41	0.026897	0.0217524	0.0826491	0.8321932	0.6730193	2.5188062	2.5188062
10:54.7	574430	6.35303E+12	5.12815E+13	5715.13	0.026897	0.0226581	0.0831866	0.8321932	0.7010416	2.5351866	2.5351866
15:57.5	574430	6.35303E+12	5.12815E+13	5712.23	0.026897	0.0229356	0.0831444	0.8321932	0.7096275	2.5339002	2.5339002
21:00.5	574430	6.35303E+12	5.12815E+13	5713.4	0.026897	0.0229256	0.0831614	0.8321932	0.7093181	2.5344192	2.5344192
26:04.3	574430	6.35303E+12	5.12815E+13	5723.95	0.026897	0.023048	0.083315	0.8321932	0.7131051	2.5390991	2.5390991
31:07.1	574430	6.35303E+12	5.12815E+13	5735.36	0.026897	0.0238875	0.0834811	0.8321932	0.7390793	2.5441605	2.5441605
36:10.4	574430	6.35303E+12	5.12815E+13	5739.01	0.026897	0.0236472	0.0835342	0.8321932	0.7316444	2.5457796	2.5457796
41:13.2	574430	6.35303E+12	5.12815E+13	5741.24	0.026897	0.0239907	0.0835666	0.8321932	0.7422723	2.5467688	2.5467688
46:16.4	574430	6.35303E+12	5.12815E+13	5724.65	0.026897	0.0464448	0.0833252	0.8321932	1.4370021	2.5394096	2.5394096
56:21.7	574432	6.35303E+12	4.99455E+13	5715.44	0.026897	0.0462722	0.0854165	0.8321932	1.4316619	2.6031435	2.6031435
01:25.6	574432	6.35303E+12	4.99455E+13	5710.99	0.026856	0.0260505	0.08535	0.8309246	0.8060025	2.6011167	2.6011167
06:28.6	574433	6.35303E+12	4.98413E+13	5720.19	0.026856	0.0232273	0.0856661	0.8309246	0.7186527	2.6107513	2.6107513
11:32.0	574435	6.35303E+12	4.97656E+13	5727.69	0.026856	0.0241208	0.085909	0.8309246	0.7462976	2.6181535	2.6181535
16:35.1	574435	6.35303E+12	4.97656E+13	5726.31	0.026856	0.0265562	0.0858883	0.8309246	0.8216488	2.6175227	2.6175227
21:38.0	574437	6.35303E+12	4.98823E+13	5731.36	0.026856	0.0254804	0.0857628	0.8309246	0.7883636	2.6136992	2.6136992
26:41.0	574438	6.35303E+12	4.9928E+13	5735.02	0.026856	0.0467602	0.0857391	0.8309246	1.4467606	2.6129777	2.6129777
31:44.0	574440	6.35303E+12	4.96931E+13	5745.06	0.026856	0.0262716	0.0862952	0.8309246	0.8128433	2.6299251	2.6299251
36:47.2	574441	6.35303E+12	5.04581E+13	5742.56	0.026856	0.0260607	0.0849499	0.8309246	0.8063181	2.5889252	2.5889252
41:49.9	574441	6.35303E+12	5.04581E+13	5743.71	0.026856	0.0469087	0.0849669	0.8309246	1.4513552	2.5894437	2.5894437
46:52.8	574442	6.35303E+12	5.28842E+13	5750.85	0.026856	0.0335792	0.0811698	0.8309246	1.0389404	2.4737229	2.4737229
51:55.7	574442	6.35303E+12	5.28842E+13	5746.02	0.026856	0.0258719	0.0811016	0.8309246	0.8004766	2.4716453	2.4716453
56:59.4	574443	6.35303E+12	5.28228E+13	5737.61	0.026856	0.0247931	0.0810771	0.8309246	0.7670985	2.4708977	2.4708977
07:04.8	574443	6.35303E+12	5.28228E+13	5735.1	0.0293057	0.0239244	0.0810416	0.9067184	0.7402209	2.4698168	2.4698168
12:08.2	574443	6.35303E+12	5.28228E+13	5755.91	0.0293057	0.0241312	0.0813357	0.9067184	0.7466193	2.4787786	2.4787786
17:11.3	574443	6.35303E+12	5.28228E+13	5760.01	0.0293057	0.0244131	0.0813936	0.9067184	0.7553413	2.4805442	2.4805442
22:14.8	574444	6.35303E+12	5.21447E+13	5754.45	0.0293057	0.0243054	0.0823724	0.9067184	0.7520091	2.510372	2.510372
27:17.9	574444	6.35303E+12	5.21447E+13	5767.44	0.0293057	0.0271808	0.0825583	0.9067184	0.840974	2.5160389	2.5160389
32:20.7	574445	6.35303E+12	5.19166E+13	5755.01	0.0293057	0.0334751	0.0827425	0.9067184	1.0357196	2.5216513	2.5216513
37:23.8	574446	6.35303E+12	5.17083E+13	5764.68	0.0293057	0.0269796	0.0832153	0.9067184	0.8347488	2.5360608	2.5360608
42:26.6	574446	6.35303E+12	5.17083E+13	5756.94	0.0293057	0.0257824	0.0831036	0.9067184	0.7977075	2.5326557	2.5326557
47:30.1	574446	6.35303E+12	5.17083E+13	5755.95	0.0293057	0.0259458	0.0830893	0.9067184	0.8027631	2.5322202	2.5322202
52:32.9	574448	6.35303E+12	5.19511E+13	5743.01	0.0293057	0.0258671	0.082515	0.9067184	0.8003281	2.5147176	2.5147176
57:35.8	574448	6.35303E+12	5.19511E+13	5714.06	0.0293057	0.029113	0.082099	0.9067184	0.9007562	2.5020411	2.5020411
02:38.8	574448	6.35303E+12	5.19511E+13	5709.16	0.0285642	0.0261365	0.0820286	0.8837763	0.8086633	2.4998955	2.4998955
07:41.8	574449	6.35303E+12	5.17328E+13	5699.99	0.0285642	0.0243494	0.0822425	0.8837763	0.7533704	2.5064137	2.5064137
12:45.5	574449	6.35303E+12	5.17328E+13	5715.31	0.0285642	0.0249058	0.0824635	0.8837763	0.7705855	2.5131502	2.5131502
17:48.3	574450	6.35303E+12	5.16724E+13	5717.01	0.0285642	0.0252523	0.0825845	0.8837763	0.7813062	2.5168369	2.5168369
22:51.1	574450	6.35303E+12	5.16724E+13	5712.98	0.0285642	0.0249495	0.0825263	0.8837763	0.7719375	2.5150627	2.5150627
27:54.2	574450	6.35303E+12	5.16724E+13	5722.03	0.0285642	0.0249614	0.082657	0.8837763	0.7723057	2.5190469	2.5190469

32:57.1	574450	6.35303E+12	5.16724E+13	5727.15	0.0285642	0.024628	0.082731	0.8837763	0.7619903	2.5213009	2.5213009
38:00.1	574451	6.35303E+12	5.07309E+13	5728.02	0.0285642	0.0251649	0.0842791	0.8837763	0.778602	2.5684819	2.5684819
43:02.9	574453	6.35303E+12	5.08262E+13	5712.01	0.0285642	0.0253148	0.083886	0.8837763	0.7832399	2.5565013	2.5565013
48:06.0	574454	6.35303E+12	5.11925E+13	5714.36	0.0285642	0.0241284	0.08332	0.8837763	0.7465327	2.5392517	2.5392517
53:08.8	574454	6.35303E+12	5.11925E+13	5702.85	0.0285642	0.0233991	0.0831522	0.8837763	0.7239682	2.5341371	2.5341371
58:11.8	574454	6.35303E+12	5.11925E+13	5709.89	0.0285642	0.0231231	0.0832548	0.8837763	0.7154287	2.5372654	2.5372654
03:14.8	574454	6.35303E+12	5.11925E+13	5717.23	0.0308666	0.0242656	0.0833618	0.9550126	0.7507777	2.540527	2.540527
08:17.7	574454	6.35303E+12	5.11925E+13	5705.48	0.0308666	0.0233018	0.0831905	0.9550126	0.7209577	2.5353057	2.5353057
13:21.1	574454	6.35303E+12	5.11925E+13	5717.65	0.0308666	0.0235938	0.083368	0.9550126	0.7299922	2.5407136	2.5407136

FILE PRODUCED NATIVELY

datetime	block_height	network_diff	est_network_hashrate	BTC_price	day_ahead_LMP	real_time_LMP	breakeven_mining_cost	day_ahead_LMP_rev	real_time_	mining_rev	realized_rev
18:57.8	574204	6.35303E+12	5.38327E+13	5320.85	0.0060427	0.005385	0.0737773	0.1869611	0.166612	2.2484294	2.2484294
24:01.3	574204	6.35303E+12	5.38327E+13	5320.01	0.0060427	0.0064427	0.0737656	0.1869611	0.199337	2.2480744	2.2480744
29:04.5	574204	6.35303E+12	5.38327E+13	5319.53	0.0060427	0.0066197	0.073759	0.1869611	0.204814	2.2478716	2.2478716
34:07.5	574204	6.35303E+12	5.38327E+13	5323.01	0.0060427	0.0050811	0.0738072	0.1869611	0.157209	2.2493421	2.2493421
39:10.8	574205	6.35303E+12	5.30839E+13	5321.95	0.0060427	0.0039673	0.0748335	0.1869611	0.122748	2.2806172	2.2806172
44:13.7	574205	6.35303E+12	5.30839E+13	5326.49	0.0060427	0.0026429	0.0748973	0.1869611	0.081771	2.2825627	2.2825627
49:17.3	574206	6.35303E+12	5.44532E+13	5325.49	0.0060427	0.0055617	0.0730003	0.1869611	0.172079	2.2247506	2.2247506
54:21.0	574207	6.35303E+12	5.39845E+13	5329.01	0.0060427	0.0078101	0.0736827	0.1869611	0.241645	2.2455467	2.2455467
59:24.0	574207	6.35303E+12	5.39845E+13	5325.97	0.0060427	0.0013496	0.0736407	0.1869611	0.041757	2.2442657	2.2442657
04:26.9	574208	6.35303E+12	5.34662E+13	5326.24	0.0010725	0.0028982	0.0743583	0.0331832	0.08967	2.2661373	2.2661373
09:29.9	574208	6.35303E+12	5.34662E+13	5325.01	0.0010725	-0.0032033	0.0743412	0.0331832	-0.09911	2.2656139	2.2656139
14:32.8	574209	6.35303E+12	5.33477E+13	5321.61	0.0010725	-0.0082933	0.0744587	0.0331832	-0.25659	2.2691954	2.2691954
19:35.8	574209	6.35303E+12	5.33477E+13	5321.01	0.0010725	0.0010456	0.0744503	0.0331832	0.032351	2.2689395	2.2689395
24:38.8	574210	6.35303E+12	5.36221E+13	5327.95	0.0010725	0.001341	0.074166	0.0331832	0.041491	2.2602762	2.2602762
29:41.7	574212	6.35303E+12	5.54528E+13	5327.05	0.0010725	-0.0189529	0.0717053	0.0331832	-0.5864	2.185285	2.185285
34:44.6	574212	6.35303E+12	5.54528E+13	5323.36	0.0010725	-0.0315616	0.0716557	0.0331832	-0.97652	2.1837713	2.1837713
39:47.5	574215	6.35303E+12	5.58834E+13	5323.1	0.0010725	-0.0309173	0.0711001	0.0331832	-0.95658	2.1668382	2.1668382
44:50.4	574215	6.35303E+12	5.58834E+13	5323.1	0.0010725	-0.0300668	0.0711001	0.0331832	-0.93027	2.1668382	2.1668382
49:53.4	574215	6.35303E+12	5.58834E+13	5326.69	0.0010725	-0.0266166	0.071148	0.0331832	-0.82352	2.1682995	2.1682995
54:56.2	574215	6.35303E+12	5.58834E+13	5326.7	0.0010725	-0.031087	0.0711481	0.0331832	-0.96183	2.1683036	2.1683036
59:59.2	574216	6.35303E+12	5.54406E+13	5326.69	0.0010725	-0.0320125	0.0717163	0.0331832	-0.99047	2.1856184	2.1856184
05:02.6	574216	6.35303E+12	5.54406E+13	5330.34	0.0004616	-0.0310784	0.0717654	0.0142819	-0.96157	2.187116	2.187116
10:05.7	574219	6.35303E+12	5.59245E+13	5326.73	0.0004616	-0.0029138	0.0710963	0.0142819	-0.09015	2.1667245	2.1667245
15:08.7	574220	6.35303E+12	5.59914E+13	5330.77	0.0004616	-0.0189733	0.0710652	0.0142819	-0.58703	2.1657754	2.1657754
20:11.5	574220	6.35303E+12	5.59914E+13	5343.74	0.0004616	-0.0173406	0.0712381	0.0142819	-0.53652	2.1710449	2.1710449
25:14.5	574224	6.35303E+12	5.59847E+13	5336.19	0.0004616	-0.0300341	0.071146	0.0142819	-0.92926	2.168237	2.168237
30:17.5	574226	6.35303E+12	5.60441E+13	5332.48	0.0004616	-0.0260257	0.0710211	0.0142819	-0.80524	2.1644326	2.1644326
35:20.7	574227	6.35303E+12	5.56725E+13	5331.92	0.0004616	-0.0190855	0.0714877	0.0142819	-0.59051	2.1786519	2.1786519
40:24.0	574227	6.35303E+12	5.56725E+13	5332.07	0.0004616	-0.0196742	0.0714897	0.0142819	-0.60872	2.1787132	2.1787132
45:26.9	574227	6.35303E+12	5.56725E+13	5339.99	0.0004616	-0.0193638	0.0715959	0.0142819	-0.59912	2.1819493	2.1819493
50:29.9	574228	6.35303E+12	5.52451E+13	5343.15	0.0004616	-0.0290785	0.0721925	0.0142819	-0.89969	2.2001303	2.2001303
55:32.9	574229	6.35303E+12	5.5892E+13	5339.93	0.0004616	-0.0235031	0.0713139	0.0142819	-0.72719	2.1733552	2.1733552
00:36.0	574229	6.35303E+12	5.5892E+13	5339.62	0.0003683	-0.0186023	0.0713098	0.0113952	-0.57556	2.173229	2.173229
05:38.8	574229	6.35303E+12	5.5892E+13	5340.81	0.0003683	-0.030799	0.0713256	0.0113952	-0.95292	2.1737133	2.1737133
10:41.7	574229	6.35303E+12	5.5892E+13	5346.19	0.0003683	-0.0302803	0.0713975	0.0113952	-0.93687	2.175903	2.175903
15:45.1	574230	6.35303E+12	5.53347E+13	5351.26	0.0003683	-0.030195	0.0721849	0.0113952	-0.93423	2.1999008	2.1999008
20:48.1	574231	6.35303E+12	5.49411E+13	5348.15	0.0003683	-0.0280841	0.0726599	0.0113952	-0.86892	2.2143761	2.2143761
25:51.1	574231	6.35303E+12	5.49411E+13	5345.35	0.0003683	-0.028219	0.0726219	0.0113952	-0.8731	2.2132168	2.2132168
30:54.2	574231	6.35303E+12	5.49411E+13	5345.27	0.0003683	-0.0269783	0.0726208	0.0113952	-0.83471	2.2131836	2.2131836
35:57.2	574232	6.35303E+12	5.47061E+13	5350.24	0.0003683	-0.0274456	0.0730005	0.0113952	-0.84917	2.2247569	2.2247569
41:00.3	574232	6.35303E+12	5.47061E+13	5346.06	0.0003683	-0.0274731	0.0729435	0.0113952	-0.85002	2.2230187	2.2230187
46:03.7	574232	6.35303E+12	5.47061E+13	5353.06	0.0003683	-0.0289024	0.073039	0.0113952	-0.89424	2.2259295	2.2259295
51:06.6	574232	6.35303E+12	5.47061E+13	5358.68	0.0003683	-0.0281664	0.0731157	0.0113952	-0.87147	2.2282664	2.2282664

56:09.5	574232	6.35303E+12	5.47061E+13	5361.44	0.0003683	-0.0264087	0.0731533	0.0113952	-0.81709	2.2294141	2.2294141
01:12.5	574232	6.35303E+12	5.47061E+13	5374.99	0.0029068	-0.0263978	0.0733382	0.0899364	-0.81675	2.2350485	2.2350485
06:15.5	574233	6.35303E+12	5.35475E+13	5374.51	0.0029068	-0.0027561	0.0749183	0.0899364	-0.08527	2.2832021	2.2832021
11:18.3	574233	6.35303E+12	5.35475E+13	5358.81	0.0029068	-0.0007245	0.0746994	0.0899364	-0.02242	2.2765324	2.2765324
16:21.5	574233	6.35303E+12	5.35475E+13	5364.9	0.0029068	-0.0182589	0.0747843	0.0899364	-0.56493	2.2791195	2.2791195
21:24.5	574234	6.35303E+12	5.31615E+13	5359.77	0.0029068	-0.0018612	0.0752553	0.0899364	-0.05759	2.293473	2.293473
26:27.4	574234	6.35303E+12	5.31615E+13	5359.03	0.0029068	-0.0145596	0.0752449	0.0899364	-0.45047	2.2931563	2.2931563
31:30.3	574234	6.35303E+12	5.31615E+13	5350.15	0.0029068	-0.0032024	0.0751202	0.0899364	-0.09908	2.2893565	2.2893565
36:33.4	574234	6.35303E+12	5.31615E+13	5341.65	0.0029068	-0.0159588	0.0750009	0.0899364	-0.49377	2.2857193	2.2857193
41:37.6	574236	6.35303E+12	5.29706E+13	5347.88	0.0029068	-0.031347	0.075359	0.0899364	-0.96988	2.2966332	2.2966332
46:40.5	574237	6.35303E+12	5.26741E+13	5351.2	0.0029068	-0.0299955	0.0758303	0.0899364	-0.92806	2.3109964	2.3109964
51:43.8	574238	6.35303E+12	5.2719E+13	5355.44	0.0029068	-0.005314	0.0758257	0.0899364	-0.16442	2.3108556	2.3108556
56:47.1	574238	6.35303E+12	5.2719E+13	5345.98	0.0029068	-0.0015188	0.0756917	0.0899364	-0.04699	2.3067736	2.3067736
01:50.1	574239	6.35303E+12	5.28168E+13	5350.18	0.0123358	-0.0315408	0.0756109	0.3816697	-0.97587	2.3043114	2.3043114
06:52.9	574240	6.35303E+12	5.25658E+13	5350.99	0.0123358	-0.0303257	0.0759835	0.3816697	-0.93828	2.3156641	2.3156641
11:55.9	574242	6.35303E+12	5.34165E+13	5348.27	0.0123358	9.42E-05	0.0747354	0.3816697	0.002915	2.2776282	2.2776282
16:58.9	574243	6.35303E+12	5.35108E+13	5354.48	0.0123358	0.0004518	0.0746903	0.3816697	0.013979	2.2762553	2.2762553
22:01.8	574245	6.35303E+12	5.38531E+13	5359.65	0.0123358	0.0010006	0.0742872	0.3816697	0.030959	2.2639687	2.2639687
27:04.8	574246	6.35303E+12	5.41667E+13	5357.51	0.0123358	-0.0032478	0.0738276	0.3816697	-0.10049	2.2499632	2.2499632
32:07.7	574246	6.35303E+12	5.41667E+13	5361.99	0.0123358	-0.0012084	0.0738894	0.3816697	-0.03739	2.2518446	2.2518446
37:10.8	574246	6.35303E+12	5.41667E+13	5361.98	0.0123358	0.0049192	0.0738892	0.3816697	0.1522	2.2518404	2.2518404
42:13.6	574246	6.35303E+12	5.41667E+13	5366.22	0.0123358	-0.0153369	0.0739476	0.3816697	-0.47452	2.2536211	2.2536211
47:16.4	574249	6.35303E+12	5.43573E+13	5361.59	0.0123358	-0.001234	0.0736247	0.3816697	-0.03818	2.2437799	2.2437799
52:19.3	574251	6.35303E+12	5.52479E+13	5360.9	0.0123358	0.0019206	0.0724286	0.3816697	0.059423	2.2073275	2.2073275
57:22.2	574251	6.35303E+12	5.52479E+13	5354.26	0.0123358	0.0019529	0.0723389	0.3816697	0.060423	2.2045935	2.2045935
02:25.2	574252	6.35303E+12	5.50584E+13	5358.27	0.0171547	0.0052837	0.0726423	0.5307664	0.163478	2.2138386	2.2138386
07:29.5	574253	6.35303E+12	5.55506E+13	5362.43	0.0171547	0.1591301	0.0720545	0.5307664	4.923485	2.1959243	4.9234853
12:32.4	574254	6.35303E+12	5.55733E+13	5360.24	0.0171547	0.0137192	0.0719957	0.5307664	0.424472	2.1941337	2.1941337
17:35.8	574255	6.35303E+12	5.5978E+13	5358.19	0.0171547	0.0100247	0.0714478	0.5307664	0.310164	2.1774367	2.1774367
22:39.3	574257	6.35303E+12	5.59531E+13	5365.45	0.0171547	0.010676	0.0715764	0.5307664	0.330315	2.1813562	2.1813562
27:42.4	574257	6.35303E+12	5.59531E+13	5368.93	0.0171547	0.0084567	0.0716229	0.5307664	0.26165	2.182771	2.182771
32:45.3	574257	6.35303E+12	5.59531E+13	5368.01	0.0171547	0.00695	0.0716106	0.5307664	0.215033	2.182397	2.182397
37:48.1	574257	6.35303E+12	5.59531E+13	5368.01	0.0171547	0.0068908	0.0716106	0.5307664	0.213201	2.182397	2.182397
42:51.2	574258	6.35303E+12	5.61961E+13	5363.48	0.0171547	0.0079862	0.0712408	0.5307664	0.247093	2.1711281	2.1711281
47:54.2	574258	6.35303E+12	5.61961E+13	5363.48	0.0171547	0.0077288	0.0712408	0.5307664	0.239129	2.1711281	2.1711281
53:01.0	574258	6.35303E+12	5.61961E+13	5367.12	0.0171547	0.0079606	0.0712892	0.5307664	0.246301	2.1726015	2.1726015
58:03.9	574258	6.35303E+12	5.61961E+13	5368.9	0.0171547	0.0094797	0.0713128	0.5307664	0.293302	2.1733221	2.1733221
03:06.9	574258	6.35303E+12	5.61961E+13	5361.18	0.0175345	0.0099931	0.0712103	0.5425174	0.309187	2.170197	2.170197
08:10.0	574258	6.35303E+12	5.61961E+13	5360.85	0.0175345	0.0140424	0.0712059	0.5425174	0.434472	2.1700634	2.1700634
13:13.1	574260	6.35303E+12	5.46276E+13	5364.69	0.0175345	0.0115677	0.0733029	0.5425174	0.357905	2.2339708	2.2339708
18:16.1	574260	6.35303E+12	5.46276E+13	5368.73	0.0175345	0.0089848	0.0733581	0.5425174	0.27799	2.2356531	2.2356531
23:19.1	574260	6.35303E+12	5.46276E+13	5365.96	0.0175345	0.0087186	0.0733202	0.5425174	0.269754	2.2344996	2.2344996
28:22.1	574260	6.35303E+12	5.46276E+13	5366.96	0.0175345	0.0076954	0.0733339	0.5425174	0.238096	2.234916	2.234916
33:25.3	574261	6.35303E+12	5.36607E+13	5369.99	0.0175345	0.0085314	0.0746974	0.5425174	0.263962	2.2764693	2.2764693

38:28.2	574261	6.35303E+12	5.36607E+13	5366.01	0.0175345	0.007959	0.074642	0.5425174	0.246252	2.2747821	2.2747821
43:31.2	574261	6.35303E+12	5.36607E+13	5363.99	0.0175345	0.0088748	0.0746139	0.5425174	0.274586	2.2739257	2.2739257
48:34.0	574261	6.35303E+12	5.36607E+13	5362.94	0.0175345	0.0087942	0.0745993	0.5425174	0.272093	2.2734806	2.2734806
53:36.9	574261	6.35303E+12	5.36607E+13	5374.61	0.0175345	0.0108958	0.0747616	0.5425174	0.337116	2.2784278	2.2784278
58:39.7	574263	6.35303E+12	5.26165E+13	5373.07	0.0175345	0.0088925	0.0762235	0.5425174	0.275134	2.3229796	2.3229796
03:42.6	574266	6.35303E+12	5.51716E+13	5365.69	0.0192201	0.008437	0.0725936	0.5946699	0.261041	2.2123564	2.2123564
08:45.5	574268	6.35303E+12	5.60115E+13	5358.95	0.0192201	0.0081387	0.0714152	0.5946699	0.251811	2.1764425	2.1764425
13:48.7	574269	6.35303E+12	5.58958E+13	5350.35	0.0192201	0.0089234	0.0714482	0.5946699	0.27609	2.1774474	2.1774474
18:51.9	574270	6.35303E+12	5.6144E+13	5350.01	0.0192201	0.0083345	0.0711278	0.5946699	0.257869	2.1676825	2.1676825
23:54.8	574271	6.35303E+12	5.6095E+13	5356.14	0.0192201	0.0081467	0.0712715	0.5946699	0.252059	2.172064	2.172064
28:57.8	574271	6.35303E+12	5.6095E+13	5348.01	0.0192201	0.0080171	0.0711633	0.5946699	0.248049	2.168767	2.168767
34:00.7	574272	6.35303E+12	5.54087E+13	5356.18	0.0192201	0.0081756	0.0721548	0.5946699	0.252953	2.1989837	2.1989837
39:03.7	574273	6.35303E+12	5.53104E+13	5355.34	0.0192201	0.0085978	0.0722717	0.5946699	0.266016	2.2025454	2.2025454
44:07.1	574274	6.35303E+12	5.53441E+13	5355.28	0.0192201	0.0106277	0.072227	0.5946699	0.328821	2.2011814	2.2011814
49:10.1	574274	6.35303E+12	5.53441E+13	5354.11	0.0192201	0.0119739	0.0722112	0.5946699	0.370473	2.2007005	2.2007005
54:13.2	574274	6.35303E+12	5.53441E+13	5355.14	0.0192201	0.0170918	0.0722251	0.5946699	0.52882	2.2011238	2.2011238
59:16.2	574274	6.35303E+12	5.53441E+13	5369.69	0.0192201	0.0147439	0.0724213	0.5946699	0.456176	2.2071043	2.2071043
04:19.1	574274	6.35303E+12	5.53441E+13	5370.68	0.0216772	0.0099164	0.0724347	0.6706926	0.306813	2.2075112	2.2075112
09:22.5	574274	6.35303E+12	5.53441E+13	5367.34	0.0216772	0.0091219	0.0723896	0.6706926	0.282232	2.2061384	2.2061384
14:25.5	574274	6.35303E+12	5.53441E+13	5364.39	0.0216772	0.0156346	0.0723498	0.6706926	0.483735	2.2049258	2.2049258
19:28.4	574275	6.35303E+12	5.36343E+13	5366.28	0.0216772	0.0160516	0.0746825	0.6706926	0.496637	2.276015	2.276015
24:31.3	574275	6.35303E+12	5.36343E+13	5371.27	0.0216772	0.0160404	0.0747519	0.6706926	0.49629	2.2781314	2.2781314
29:34.0	574275	6.35303E+12	5.36343E+13	5369.89	0.0216772	0.0158588	0.0747327	0.6706926	0.490671	2.2775461	2.2775461
34:37.0	574277	6.35303E+12	5.50501E+13	5373.89	0.0216772	0.0200104	0.0728651	0.6706926	0.619122	2.2206282	2.2206282
39:39.9	574280	6.35303E+12	5.61893E+13	5386.3	0.0216772	0.0192174	0.0715525	0.6706926	0.594586	2.1806275	2.1806275
44:42.8	574281	6.35303E+12	5.67946E+13	5376.94	0.0216772	0.0172971	0.070667	0.6706926	0.535172	2.1536405	2.1536405
49:45.4	574281	6.35303E+12	5.67946E+13	5380.34	0.0216772	0.0171393	0.0707117	0.6706926	0.53029	2.1550023	2.1550023
54:48.5	574282	6.35303E+12	5.6096E+13	5376.01	0.0216772	0.0134753	0.0715347	0.6706926	0.416926	2.1800845	2.1800845
59:51.6	574282	6.35303E+12	5.6096E+13	5379.99	0.0216772	0.0180308	0.0715877	0.6706926	0.557873	2.1816984	2.1816984
04:54.7	574283	6.35303E+12	5.56063E+13	5387.53	0.0236157	0.0178982	0.0723193	0.7306698	0.55377	2.2039945	2.2039945
09:58.2	574283	6.35303E+12	5.56063E+13	5404.49	0.0236157	0.0199601	0.0725469	0.7306698	0.617566	2.2109326	2.2109326
15:01.2	574283	6.35303E+12	5.56063E+13	5410.8	0.0236157	0.019843	0.0726316	0.7306698	0.613942	2.213514	2.213514
20:04.6	574284	6.35303E+12	5.64188E+13	5402.18	0.0236157	0.0211652	0.0714716	0.7306698	0.654851	2.1781617	2.1781617
25:08.2	574284	6.35303E+12	5.64188E+13	5401.01	0.0236157	0.0207169	0.0714561	0.7306698	0.640981	2.17769	2.17769
30:11.3	574285	6.35303E+12	5.57835E+13	5408.19	0.0236157	0.0202099	0.072366	0.7306698	0.625294	2.2054203	2.2054203
35:14.3	574285	6.35303E+12	5.57835E+13	5399.01	0.0236157	0.0197121	0.0722432	0.7306698	0.609892	2.2016767	2.2016767
40:17.3	574285	6.35303E+12	5.57835E+13	5401.14	0.0236157	0.0205203	0.0722717	0.7306698	0.634898	2.2025453	2.2025453
45:20.2	574285	6.35303E+12	5.57835E+13	5401.12	0.0236157	0.020253	0.0722714	0.7306698	0.626628	2.2025372	2.2025372
50:23.3	574285	6.35303E+12	5.57835E+13	5404.01	0.0236157	0.0204966	0.0723101	0.7306698	0.634165	2.2037157	2.2037157
55:26.4	574285	6.35303E+12	5.57835E+13	5402.66	0.0236157	0.0204779	0.072292	0.7306698	0.633586	2.2031652	2.2031652
00:29.5	574285	6.35303E+12	5.57835E+13	5405.56	0.0246623	0.0205394	0.0723309	0.7630516	0.635489	2.2043478	2.2043478
05:32.6	574285	6.35303E+12	5.57835E+13	5408.51	0.0246623	0.020696	0.0723703	0.7630516	0.640334	2.2055508	2.2055508
10:35.6	574286	6.35303E+12	5.36818E+13	5410.26	0.0246623	0.0206614	0.0752279	0.7630516	0.639264	2.2926386	2.2926386
15:38.9	574287	6.35303E+12	5.50908E+13	5405.01	0.0246623	0.0206639	0.0732328	0.7630516	0.639341	2.2318356	2.2318356

20:42.0	574287	6.35303E+12	5.50908E+13	5377.7	0.0246623	0.0207146	0.0728628	0.7630516	0.64091	2.2205587	2.2205587
25:45.3	574288	6.35303E+12	5.6446E+13	5379.31	0.0246623	0.0207073	0.0711347	0.7630516	0.640684	2.1678941	2.1678941
30:48.4	574289	6.35303E+12	5.61643E+13	5386.34	0.0246623	0.0217617	0.071585	0.7630516	0.673307	2.1816166	2.1816166
35:51.4	574289	6.35303E+12	5.61643E+13	5386.22	0.0246623	0.0218403	0.0715834	0.7630516	0.675739	2.181568	2.181568
40:54.5	574289	6.35303E+12	5.61643E+13	5380.96	0.0246623	0.0212653	0.0715135	0.7630516	0.657948	2.1794376	2.1794376
45:57.5	574289	6.35303E+12	5.61643E+13	5373.11	0.0246623	0.0218495	0.0714091	0.7630516	0.676024	2.1762581	2.1762581
51:00.5	574290	6.35303E+12	5.56905E+13	5379.99	0.0246623	0.0219329	0.0721089	0.7630516	0.678604	2.1975834	2.1975834
56:03.8	574293	6.35303E+12	5.63654E+13	5381.68	0.0246623	0.0219044	0.0712679	0.7630516	0.677722	2.1719525	2.1719525
01:07.0	574294	6.35303E+12	5.66874E+13	5378.02	0.0258006	0.02135	0.0708148	0.7982706	0.660569	2.1581456	2.1581456
06:09.8	574295	6.35303E+12	5.71185E+13	5388.44	0.0258006	0.0215474	0.0704165	0.7982706	0.666677	2.1460054	2.1460054
11:12.8	574296	6.35303E+12	5.69506E+13	5391.26	0.0258006	0.0217122	0.070661	0.7982706	0.671776	2.1534583	2.1534583
16:15.8	574298	6.35303E+12	5.77593E+13	5388.44	0.0258006	0.0240987	0.0696352	0.7982706	0.745614	2.1221966	2.1221966
21:19.0	574298	6.35303E+12	5.77593E+13	5388.43	0.0258006	0.0223207	0.0696351	0.7982706	0.690603	2.1221927	2.1221927
26:22.1	574298	6.35303E+12	5.77593E+13	5393.86	0.0258006	0.0257788	0.0697053	0.7982706	0.797596	2.1243313	2.1243313
31:25.5	574300	6.35303E+12	5.74492E+13	5390.38	0.0258006	0.0265151	0.0700363	0.7982706	0.820377	2.13442	2.13442
36:29.7	574301	6.35303E+12	5.7613E+13	5391.27	0.0258006	0.0846763	0.0698488	0.7982706	2.619885	2.1287047	2.6198847
41:33.9	574301	6.35303E+12	5.7613E+13	5391.2	0.0258006	0.2210761	0.0698479	0.7982706	6.840095	2.1286771	6.8400945
46:37.9	574302	6.35303E+12	5.77583E+13	5394.99	0.0258006	0.1570346	0.0697211	0.7982706	4.858651	2.1248138	4.8586505
51:42.1	574302	6.35303E+12	5.77583E+13	5394.99	0.0258006	0.1785148	0.0697211	0.7982706	5.523248	2.1248138	5.5232479
56:46.2	574305	6.35303E+12	5.8471E+13	5394.98	0.0258006	0.1762844	0.0688712	0.7982706	5.454239	2.0989108	5.4542393
01:50.2	574305	6.35303E+12	5.8471E+13	5392.44	0.0281961	0.2198672	0.0688387	0.8723873	6.802691	2.0979226	6.8026912
06:53.7	574305	6.35303E+12	5.8471E+13	5392.99	0.0281961	0.0379209	0.0688458	0.8723873	1.173273	2.0981366	2.0981366
11:56.7	574306	6.35303E+12	5.85526E+13	5393.03	0.0281961	0.0282621	0.0687504	0.8723873	0.874429	2.0952297	2.0952297
17:00.1	574309	6.35303E+12	6.00748E+13	5396.48	0.0281961	0.0252831	0.0670512	0.8723873	0.782259	2.0434454	2.0434454
22:03.0	574309	6.35303E+12	6.00748E+13	5397.01	0.0281961	0.0261016	0.0670578	0.8723873	0.807584	2.0436461	2.0436461
27:06.2	574310	6.35303E+12	6.02983E+13	5396.19	0.0281961	0.0259345	0.0667991	0.8723873	0.802413	2.0357628	2.0357628
32:09.2	574311	6.35303E+12	6.01255E+13	5399.99	0.0281961	0.0302117	0.0670382	0.8723873	0.93475	2.0430488	2.0430488
37:12.3	574311	6.35303E+12	6.01255E+13	5396.83	0.0281961	0.0302065	0.0669989	0.8723873	0.934589	2.0418532	2.0418532
42:16.0	574312	6.35303E+12	5.99055E+13	5396.6	0.0281961	0.0302581	0.0672421	0.8723873	0.936186	2.0492645	2.0492645
47:18.9	574312	6.35303E+12	5.99055E+13	5395.6	0.0281961	0.0260237	0.0672297	0.8723873	0.805173	2.0488848	2.0488848
52:22.0	574315	6.35303E+12	5.97623E+13	5391.32	0.0281961	0.0287961	0.0673373	0.8723873	0.890951	2.0521662	2.0521662
57:25.5	574315	6.35303E+12	5.97623E+13	5389.83	0.0281961	0.0262929	0.0673187	0.8723873	0.813502	2.051599	2.051599
02:29.6	574316	6.35303E+12	5.95157E+13	5386.52	0.0299161	0.2138762	0.0675561	0.9256041	6.61733	2.0588338	6.6173296
07:32.4	574317	6.35303E+12	6.04051E+13	5388.05	0.0299161	0.0275251	0.0665804	0.9256041	0.851627	2.0290984	2.0290984
12:36.3	574319	6.35303E+12	6.0775E+13	5393.81	0.0299161	0.2273591	0.0662458	0.9256041	7.034491	2.0189017	7.0344906
17:39.2	574320	6.35303E+12	6.21737E+13	5393.01	0.0299161	0.0493661	0.064746	0.9256041	1.527387	1.9731924	1.9731924
22:42.0	574320	6.35303E+12	6.21737E+13	5402.48	0.0299161	0.0375238	0.0648597	0.9256041	1.160986	1.9766573	1.9766573
27:44.8	574320	6.35303E+12	6.21737E+13	5407.98	0.0299161	0.0307697	0.0649257	0.9256041	0.952015	1.9786696	1.9786696
32:47.7	574321	6.35303E+12	6.17749E+13	5401.85	0.0299161	0.028391	0.0652708	0.9256041	0.878418	1.9891864	1.9891864
37:50.6	574321	6.35303E+12	6.17749E+13	5405.27	0.0299161	0.0282624	0.0653121	0.9256041	0.874439	1.9904458	1.9904458
42:53.6	574321	6.35303E+12	6.17749E+13	5406.86	0.0299161	0.0277909	0.0653313	0.9256041	0.85985	1.9910313	1.9910313
47:56.6	574321	6.35303E+12	6.17749E+13	5408.61	0.0299161	0.0279723	0.0653525	0.9256041	0.865463	1.9916757	1.9916757
52:59.4	574321	6.35303E+12	6.17749E+13	5414.93	0.0299161	0.0279911	0.0654288	0.9256041	0.866045	1.994003	1.994003
58:02.4	574321	6.35303E+12	6.17749E+13	5402.69	0.0299161	0.026867	0.0652809	0.9256041	0.831265	1.9894957	1.9894957

03:05.3	574321	6.35303E+12	6.17749E+13	5391.74	0.0292659	0.0268991	0.0651486	0.9054869	0.832258	1.9854634	1.9854634
08:08.5	574321	6.35303E+12	6.17749E+13	5395.3	0.0292659	0.0270222	0.0651917	0.9054869	0.836067	1.9867744	1.9867744
13:11.4	574321	6.35303E+12	6.17749E+13	5397.89	0.0292659	0.0267872	0.065223	0.9054869	0.828796	1.9877281	1.9877281
18:14.9	574321	6.35303E+12	6.17749E+13	5399.5	0.0292659	0.0268543	0.0652424	0.9054869	0.830872	1.988321	1.988321
23:17.9	574321	6.35303E+12	6.17749E+13	5394.06	0.0292659	0.0269768	0.0651767	0.9054869	0.834662	1.9863178	1.9863178
28:20.8	574321	6.35303E+12	6.17749E+13	5393.44	0.0292659	0.0268761	0.0651692	0.9054869	0.831547	1.9860895	1.9860895
33:24.0	574322	6.35303E+12	5.8824E+13	5394.4	0.0292659	0.0268238	0.0684506	0.9054869	0.829928	2.086093	2.086093
38:27.3	574322	6.35303E+12	5.8824E+13	5392.26	0.0292659	0.0261315	0.0684234	0.9054869	0.808509	2.0852655	2.0852655
43:30.4	574323	6.35303E+12	5.85421E+13	5392.81	0.0292659	0.0274694	0.0687599	0.9054869	0.849903	2.0955189	2.0955189
48:33.4	574323	6.35303E+12	5.85421E+13	5397.13	0.0292659	0.0267346	0.068815	0.9054869	0.827169	2.0971976	2.0971976
53:36.4	574323	6.35303E+12	5.85421E+13	5402.13	0.0292659	0.0276262	0.0688787	0.9054869	0.854755	2.0991404	2.0991404
58:39.2	574326	6.35303E+12	5.98016E+13	5403.36	0.0292659	0.0304034	0.0674434	0.9054869	0.940681	2.0553977	2.0553977
03:42.1	574326	6.35303E+12	5.98016E+13	5402.78	0.030273	0.0359978	0.0674361	0.9366466	1.113772	2.0551771	2.0551771
08:45.0	574327	6.35303E+12	5.96067E+13	5401.47	0.030273	0.0287712	0.0676402	0.9366466	0.890181	2.0613959	2.0613959
13:48.1	574327	6.35303E+12	5.96067E+13	5402.02	0.030273	0.0276182	0.0676471	0.9366466	0.854507	2.0616058	2.0616058
18:51.1	574328	6.35303E+12	5.96752E+13	5405.01	0.030273	0.0258534	0.0676069	0.9366466	0.799904	2.0603812	2.0603812
23:54.0	574328	6.35303E+12	5.96752E+13	5405.54	0.030273	0.0273201	0.0676135	0.9366466	0.845284	2.0605832	2.0605832
28:57.0	574328	6.35303E+12	5.96752E+13	5411.23	0.030273	0.0271151	0.0676847	0.9366466	0.838941	2.0627523	2.0627523
34:00.5	574329	6.35303E+12	5.94855E+13	5414.16	0.030273	0.0272609	0.0679373	0.9366466	0.843452	2.0704516	2.0704516
39:03.4	574330	6.35303E+12	5.97035E+13	5414.16	0.030273	0.0272442	0.0676893	0.9366466	0.842936	2.0628912	2.0628912
44:06.6	574331	6.35303E+12	5.96567E+13	5414.18	0.030273	0.0259561	0.0677426	0.9366466	0.803082	2.0645162	2.0645162
49:10.2	574333	6.35303E+12	5.9734E+13	5407.51	0.030273	0.0270756	0.0675716	0.9366466	0.837719	2.0593055	2.0593055
54:13.3	574333	6.35303E+12	5.9734E+13	5400.01	0.030273	0.0271004	0.0674779	0.9366466	0.838486	2.0564494	2.0564494
59:16.4	574334	6.35303E+12	5.92562E+13	5403.78	0.030273	0.0273779	0.0680695	0.9366466	0.847072	2.0744785	2.0744785
04:19.8	574335	6.35303E+12	5.9018E+13	5401.4	0.0290851	0.0283554	0.0683141	0.899893	0.877316	2.0819329	2.0819329
09:23.3	574335	6.35303E+12	5.9018E+13	5400.65	0.0290851	0.0271462	0.0683046	0.899893	0.839903	2.0816439	2.0816439
14:26.3	574337	6.35303E+12	6.04407E+13	5403.84	0.0290851	0.0271793	0.0667361	0.899893	0.840928	2.0338434	2.0338434
19:29.7	574338	6.35303E+12	6.00814E+13	5403.99	0.0290851	0.0269492	0.0671371	0.899893	0.833808	2.0460639	2.0460639
24:32.5	574341	6.35303E+12	6.05704E+13	5406.15	0.0290851	0.0265213	0.0666217	0.899893	0.820569	2.0303561	2.0303561
29:35.5	574342	6.35303E+12	6.0482E+13	5405.72	0.0290851	0.0269952	0.0667137	0.899893	0.835232	2.0331615	2.0331615
34:38.6	574343	6.35303E+12	5.99395E+13	5402.02	0.0290851	0.0260047	0.0672715	0.899893	0.804585	2.0501593	2.0501593
39:41.6	574343	6.35303E+12	5.99395E+13	5399.38	0.0290851	0.0266287	0.0672386	0.899893	0.823892	2.0491574	2.0491574
44:44.4	574344	6.35303E+12	5.95861E+13	5399.01	0.0290851	0.0265012	0.0676328	0.899893	0.819947	2.0611697	2.0611697
49:47.3	574344	6.35303E+12	5.95861E+13	5394.85	0.0290851	0.0271631	0.0675807	0.899893	0.840426	2.0595816	2.0595816
54:50.3	574344	6.35303E+12	5.95861E+13	5396.47	0.0290851	0.0265076	0.067601	0.899893	0.820145	2.0602	2.0602
59:53.1	574344	6.35303E+12	5.95861E+13	5398.44	0.0290851	0.0266994	0.0676256	0.899893	0.826079	2.0609521	2.0609521
04:56.9	574346	6.35303E+12	5.84022E+13	5394.51	0.02818	0.2274043	0.0689463	0.8718892	7.035889	2.1012014	7.035889
10:00.6	574347	6.35303E+12	5.86008E+13	5393.4	0.02818	0.0269004	0.0686985	0.8718892	0.832298	2.0936499	2.0936499
15:04.1	574347	6.35303E+12	5.86008E+13	5397.48	0.02818	0.026967	0.0687505	0.8718892	0.834359	2.0952337	2.0952337
20:07.3	574348	6.35303E+12	5.87322E+13	5396.99	0.02818	0.0271281	0.0685905	0.8718892	0.839343	2.0903567	2.0903567
25:10.3	574348	6.35303E+12	5.87322E+13	5396.15	0.02818	0.0268342	0.0685798	0.8718892	0.83025	2.0900313	2.0900313
30:14.9	574349	6.35303E+12	5.84595E+13	5395.98	0.02818	0.226576	0.0688975	0.8718892	7.010261	2.0997122	7.0102614
35:17.9	574350	6.35303E+12	5.91267E+13	5396.77	0.02818	0.0272473	0.06813	0.8718892	0.843032	2.0763241	2.0763241
40:20.9	574350	6.35303E+12	5.91267E+13	5395.88	0.02818	0.024981	0.0681188	0.8718892	0.772912	2.0759816	2.0759816

45:24.0	574351	6.35303E+12	5.92508E+13	5395.8	0.02818	0.0257123	0.0679751	0.8718892	0.795539	2.0716025	2.0716025	2.0716025
50:27.1	574351	6.35303E+12	5.92508E+13	5393.06	0.02818	0.0249229	0.0679406	0.8718892	0.771115	2.0705505	2.0705505	2.0705505
55:30.2	574351	6.35303E+12	5.92508E+13	5392.02	0.02818	0.0251479	0.0679275	0.8718892	0.778076	2.0701512	2.0701512	2.0701512
00:33.0	574351	6.35303E+12	5.92508E+13	5390.01	0.0294406	0.0252162	0.0679022	0.9108922	0.780189	2.0693795	2.0693795	2.0693795
05:35.8	574351	6.35303E+12	5.92508E+13	5365.12	0.0294406	0.0226972	0.0675886	0.9108922	0.702251	2.0598235	2.0598235	2.0598235
10:38.7	574351	6.35303E+12	5.92508E+13	5371.99	0.0294406	0.0227666	0.0676752	0.9108922	0.704399	2.0624611	2.0624611	2.0624611
15:41.6	574351	6.35303E+12	5.92508E+13	5379.7	0.0294406	0.0243866	0.0677723	0.9108922	0.754521	2.0654212	2.0654212	2.0654212
20:44.5	574353	6.35303E+12	5.95341E+13	5378.3	0.0294406	0.0230678	0.0674322	0.9108922	0.713718	2.0550568	2.0550568	2.0550568
25:47.5	574353	6.35303E+12	5.95341E+13	5381.03	0.0294406	0.0249763	0.0674664	0.9108922	0.772767	2.0560999	2.0560999	2.0560999
30:50.5	574353	6.35303E+12	5.95341E+13	5392.25	0.0294406	0.0253991	0.0676071	0.9108922	0.785848	2.0603871	2.0603871	2.0603871
35:53.6	574353	6.35303E+12	5.95341E+13	5394.16	0.0294406	0.0253424	0.067631	0.9108922	0.784094	2.0611169	2.0611169	2.0611169
40:56.7	574353	6.35303E+12	5.95341E+13	5399.99	0.0294406	0.0250223	0.0677041	0.9108922	0.77419	2.0633446	2.0633446	2.0633446
45:59.6	574356	6.35303E+12	6.01278E+13	5396.88	0.0294406	0.0234576	0.0669971	0.9108922	0.725778	2.0417971	2.0417971	2.0417971
51:02.7	574356	6.35303E+12	6.01278E+13	5394.77	0.0294406	0.0249344	0.0669709	0.9108922	0.77147	2.0409989	2.0409989	2.0409989
56:05.8	574356	6.35303E+12	6.01278E+13	5402.4	0.0294406	0.022081	0.0670656	0.9108922	0.683186	2.0438855	2.0438855	2.0438855
01:08.8	574357	6.35303E+12	5.98782E+13	5407.57	0.0358454	0.0219246	0.0674096	1.1090567	0.678347	2.0543694	2.0543694	2.0543694
06:12.1	574357	6.35303E+12	5.98782E+13	5412.01	0.0358454	0.0217059	0.067465	1.1090567	0.671581	2.0560562	2.0560562	2.0560562
11:15.1	574359	6.35303E+12	5.99023E+13	5413.47	0.0358454	0.0219481	0.067456	1.1090567	0.679074	2.0557835	2.0557835	2.0557835
16:18.2	574360	6.35303E+12	6.0023E+13	5411.11	0.0358454	0.0220348	0.0672909	1.1090567	0.681757	2.0507521	2.0507521	2.0507521
21:21.3	574360	6.35303E+12	6.0023E+13	5411.03	0.0358454	0.0228761	0.0672899	1.1090567	0.707787	2.0507217	2.0507217	2.0507217
26:24.5	574360	6.35303E+12	6.0023E+13	5403.73	0.0358454	0.0226145	0.0671992	1.1090567	0.699693	2.0479551	2.0479551	2.0479551
31:27.6	574361	6.35303E+12	5.95038E+13	5407.93	0.0358454	0.0246405	0.0678382	1.1090567	0.762377	2.0674304	2.0674304	2.0674304
36:30.8	574361	6.35303E+12	5.95038E+13	5411.14	0.0358454	0.0360477	0.0678785	1.1090567	1.115316	2.0686576	2.0686576	2.0686576
41:34.3	574362	6.35303E+12	5.87448E+13	5422.09	0.0358454	0.0239492	0.0688946	1.1090567	0.740988	2.0996263	2.0996263	2.0996263
46:37.4	574362	6.35303E+12	5.87448E+13	5435.74	0.0358454	0.0225539	0.0690681	1.1090567	0.697818	2.1049121	2.1049121	2.1049121
51:40.5	574362	6.35303E+12	5.87448E+13	5435.55	0.0358454	0.0241469	0.0690657	1.1090567	0.747105	2.1048385	2.1048385	2.1048385
56:43.6	574363	6.35303E+12	5.80502E+13	5427.15	0.0358454	0.0327231	0.0697841	1.1090567	1.012453	2.1267343	2.1267343	2.1267343
01:47.3	574363	6.35303E+12	5.80502E+13	5428.1	0.0269617	0.0483081	0.0697964	0.834195	1.494653	2.1271066	2.1271066	2.1271066
06:50.1	574364	6.35303E+12	5.78645E+13	5441.31	0.0269617	0.0434265	0.0701907	0.834195	1.343616	2.1391255	2.1391255	2.1391255
11:53.2	574364	6.35303E+12	5.78645E+13	5428.95	0.0269617	0.0243957	0.0700313	0.834195	0.754803	2.1342664	2.1342664	2.1342664
16:56.5	574367	6.35303E+12	5.84533E+13	5433.74	0.0269617	0.0247673	0.069387	0.834195	0.7663	2.1146321	2.1146321	2.1146321
21:59.8	574367	6.35303E+12	5.84533E+13	5439.23	0.0269617	0.0232371	0.0694571	0.834195	0.718956	2.1167686	2.1167686	2.1167686
27:03.6	574368	6.35303E+12	5.81378E+13	5433.99	0.0269617	0.0215394	0.0697668	0.834195	0.666429	2.1262058	2.1262058	2.1262058
32:06.7	574368	6.35303E+12	5.81378E+13	5443.02	0.0269617	0.0212281	0.0698827	0.834195	0.656797	2.1297391	2.1297391	2.1297391
37:09.8	574369	6.35303E+12	5.7527E+13	5441.82	0.0269617	0.0207248	0.0706092	0.834195	0.641225	2.1518775	2.1518775	2.1518775
42:13.0	574370	6.35303E+12	5.73316E+13	5444.99	0.0269617	0.0200896	0.0708911	0.834195	0.621572	2.1604697	2.1604697	2.1604697
47:16.2	574370	6.35303E+12	5.73316E+13	5471.73	0.0269617	0.0200075	0.0712392	0.834195	0.619032	2.1710796	2.1710796	2.1710796
52:19.8	574370	6.35303E+12	5.73316E+13	5464.57	0.0269617	0.0196461	0.071146	0.834195	0.60785	2.1682387	2.1682387	2.1682387
57:22.8	574373	6.35303E+12	5.75391E+13	5469.53	0.0269617	0.0199141	0.0709537	0.834195	0.641225	2.162379	2.162379	2.162379
02:26.3	574373	6.35303E+12	5.75391E+13	5466.18	0.0207707	0.0196095	0.0709103	0.6426455	0.606718	2.1610546	2.1610546	2.1610546
07:29.4	574373	6.35303E+12	5.75391E+13	5468.2	0.0207707	0.0193582	0.0709365	0.6426455	0.598943	2.1618532	2.1618532	2.1618532
12:32.4	574374	6.35303E+12	5.70787E+13	5462.25	0.0207707	0.019736	0.0714308	0.6426455	0.610632	2.1769189	2.1769189	2.1769189
17:35.9	574375	6.35303E+12	5.67247E+13	5457.26	0.0207707	0.0194616	0.0718109	0.6426455	0.602142	2.1885032	2.1885032	2.1885032
22:38.8	574376	6.35303E+12	5.68162E+13	5459.27	0.0207707	0.021469	0.0717217	0.6426455	0.664251	2.185782	2.185782	2.185782

27:41.6	574376	6.35303E+12	5.68162E+13	5455.91	0.0207707	0.0195687	0.0716775	0.6426455	0.605456	2.1844367	2.1844367
32:44.5	574377	6.35303E+12	5.63276E+13	5456.06	0.0207707	0.0197946	0.0723014	0.6426455	0.612445	2.2034492	2.2034492
37:47.4	574377	6.35303E+12	5.63276E+13	5461.19	0.0207707	0.0219931	0.0723693	0.6426455	0.680467	2.205521	2.205521
42:50.1	574377	6.35303E+12	5.63276E+13	5464.3	0.0207707	0.0213058	0.0724106	0.6426455	0.659202	2.206777	2.206777
47:53.0	574378	6.35303E+12	5.65074E+13	5471.12	0.0207707	0.0213015	0.0722702	0.6426455	0.659068	2.2024995	2.2024995
52:55.9	574378	6.35303E+12	5.65074E+13	5465.8	0.0207707	0.0208578	0.0721999	0.6426455	0.64534	2.2003578	2.2003578
57:58.7	574378	6.35303E+12	5.65074E+13	5467.45	0.0207707	0.0197404	0.0722217	0.6426455	0.610768	2.2010221	2.2010221
03:32.3	574384	6.35303E+12	5.65611E+13	5475.82	0.0180828	0.018821	0.0722636	0.5594818	0.582322	2.2022993	2.2022993
08:35.1	574384	6.35303E+12	5.65611E+13	5472.78	0.0180828	0.0187888	0.0722235	0.5594818	0.581326	2.2010766	2.2010766
13:38.2	574384	6.35303E+12	5.65611E+13	5477.51	0.0180828	0.0188459	0.0722859	0.5594818	0.583092	2.2029789	2.2029789
18:41.2	574384	6.35303E+12	5.65611E+13	5475.27	0.0180828	0.0184952	0.0722564	0.5594818	0.572242	2.202078	2.202078
23:44.5	574384	6.35303E+12	5.65611E+13	5485.01	0.0180828	0.0183313	0.0723849	0.5594818	0.56717	2.2059953	2.2059953
28:47.4	574385	6.35303E+12	5.52675E+13	5483.01	0.0180828	0.0180025	0.0740521	0.5594818	0.556997	2.2568058	2.2568058
33:50.3	574386	6.35303E+12	5.5002E+13	5487.35	0.0180828	0.0182859	0.0744685	0.5594818	0.565766	2.2694951	2.2694951
38:53.3	574386	6.35303E+12	5.5002E+13	5489.7	0.0180828	0.0187295	0.0745004	0.5594818	0.579491	2.270467	2.270467
43:56.2	574387	6.35303E+12	5.4816E+13	5485.01	0.0180828	0.0183101	0.0746893	0.5594818	0.566515	2.2762247	2.2762247
48:59.1	574387	6.35303E+12	5.4816E+13	5494.56	0.0180828	0.0184541	0.0748194	0.5594818	0.57097	2.2801879	2.2801879
54:02.0	574387	6.35303E+12	5.4816E+13	5496.86	0.0180828	0.0184113	0.0748507	0.5594818	0.569646	2.2811424	2.2811424
59:04.8	574388	6.35303E+12	5.41076E+13	5492.23	0.0180828	0.0184131	0.0757667	0.5594818	0.569701	2.3090591	2.3090591
04:07.9	574388	6.35303E+12	5.41076E+13	5492.55	0.0171198	0.0184116	0.0757711	0.5296866	0.569655	2.3091936	2.3091936
09:11.2	574388	6.35303E+12	5.41076E+13	5499.47	0.0171198	0.018402	0.0758666	0.5296866	0.569358	2.3121029	2.3121029
14:14.7	574390	6.35303E+12	5.36713E+13	5497.38	0.0171198	0.0183991	0.0764543	0.5296866	0.569268	2.3300147	2.3300147
19:17.4	574393	6.35303E+12	5.4543E+13	5505.67	0.0171198	0.0188975	0.0753459	0.5296866	0.584689	2.296235	2.296235
24:20.4	574393	6.35303E+12	5.4543E+13	5525.72	0.0171198	0.0194457	0.0756203	0.5296866	0.60165	2.3045972	2.3045972
29:23.6	574393	6.35303E+12	5.4543E+13	5532.69	0.0171198	0.0193998	0.0757157	0.5296866	0.60023	2.3075042	2.3075042
34:27.1	574393	6.35303E+12	5.4543E+13	5548.77	0.0171198	0.0195967	0.0759358	0.5296866	0.606322	2.3142106	2.3142106
39:30.2	574394	6.35303E+12	5.38779E+13	5540.68	0.0171198	0.0195476	0.076761	0.5296866	0.604803	2.3393597	2.3393597
44:33.4	574395	6.35303E+12	5.53825E+13	5512.91	0.0171198	0.0198241	0.0743014	0.5296866	0.613358	2.2644017	2.2644017
49:36.3	574395	6.35303E+12	5.53825E+13	5524.53	0.0171198	0.0195437	0.074458	0.5296866	0.604682	2.2691746	2.2691746
54:39.3	574395	6.35303E+12	5.53825E+13	5525.3	0.0171198	0.0195692	0.0744684	0.5296866	0.605471	2.2694909	2.2694909
59:42.3	574395	6.35303E+12	5.53825E+13	5518.69	0.0171198	0.0192178	0.0743793	0.5296866	0.594599	2.2667759	2.2667759
04:45.3	574395	6.35303E+12	5.53825E+13	5533.7	0.0177576	0.0191891	0.0745816	0.5494201	0.593711	2.2729411	2.2729411
09:48.1	574395	6.35303E+12	5.53825E+13	5530.29	0.0177576	0.0191378	0.0745356	0.5494201	0.592124	2.2715405	2.2715405
14:51.2	574396	6.35303E+12	5.44713E+13	5534.64	0.0177576	0.0189612	0.0758421	0.5494201	0.58666	2.3113551	2.3113551
19:54.1	574396	6.35303E+12	5.44713E+13	5544.31	0.0177576	0.0189168	0.0759746	0.5494201	0.585286	2.3153934	2.3153934
24:57.0	574396	6.35303E+12	5.44713E+13	5549.76	0.0177576	0.018934	0.0760493	0.5494201	0.585818	2.3176694	2.3176694
30:00.1	574397	6.35303E+12	5.38389E+13	5535.92	0.0177576	0.019027	0.0767506	0.5494201	0.588695	2.3390422	2.3390422
35:03.1	574397	6.35303E+12	5.38389E+13	5548.11	0.0177576	0.0186692	0.0769196	0.5494201	0.577625	2.3441927	2.3441927
40:06.4	574397	6.35303E+12	5.38389E+13	5576.84	0.0177576	0.0189082	0.0773179	0.5494201	0.58502	2.3563317	2.3563317
45:09.5	574397	6.35303E+12	5.38389E+13	5588.49	0.0177576	0.0188137	0.0774794	0.5494201	0.582096	2.3612541	2.3612541
50:12.8	574397	6.35303E+12	5.38389E+13	5580.14	0.0177576	0.0194016	0.0773636	0.5494201	0.600286	2.3577261	2.3577261
55:16.0	574397	6.35303E+12	5.38389E+13	5584.03	0.0177576	0.0194473	0.0774176	0.5494201	0.6017	2.3593697	2.3593697
00:19.0	574398	6.35303E+12	5.24135E+13	5587.36	0.0179634	0.0194473	0.0795704	0.5557876	0.6017	2.4249801	2.4249801
05:22.0	574399	6.35303E+12	5.22154E+13	5575.01	0.0179634	0.0198978	0.0796957	0.5557876	0.615638	2.4287994	2.4287994

10:25.0	574400	6.35303E+12	5.19602E+13	5558.15	0.0179634	0.0197059	0.079845	0.5557876	0.609701	2.4333473	2.4333473
15:28.5	574400	6.35303E+12	5.19602E+13	5577.5	0.0179634	0.0197937	0.0801229	0.5557876	0.612417	2.4418187	2.4418187
20:31.4	574400	6.35303E+12	5.19602E+13	5579.19	0.0179634	0.019798	0.0801472	0.5557876	0.61255	2.4425586	2.4425586
25:34.2	574401	6.35303E+12	5.14241E+13	5571.72	0.0179634	0.0199501	0.0808744	0.5557876	0.617256	2.4647197	2.4647197
30:37.1	574401	6.35303E+12	5.14241E+13	5570.01	0.0179634	0.0199163	0.0808496	0.5557876	0.61621	2.4639632	2.4639632
35:40.1	574402	6.35303E+12	5.15991E+13	5590.6	0.0179634	0.0206372	0.0808732	0.5557876	0.638515	2.4646821	2.4646821
40:43.0	574403	6.35303E+12	5.16659E+13	5618.11	0.0179634	0.0201332	0.0811661	0.5557876	0.622921	2.4736097	2.4736097
45:45.9	574404	6.35303E+12	5.22163E+13	5610.56	0.0179634	0.0220943	0.0802027	0.5557876	0.683598	2.444248	2.444248
50:48.6	574406	6.35303E+12	5.44332E+13	5659.03	0.0179634	0.0201857	0.0776008	0.5557876	0.624546	2.3649536	2.3649536
55:51.5	574406	6.35303E+12	5.44332E+13	5657.45	0.0179634	0.0201063	0.0775791	0.5557876	0.622089	2.3642933	2.3642933
00:54.3	574407	6.35303E+12	5.44179E+13	5681.44	0.0187756	0.0190108	0.0779301	0.5809171	0.588194	2.3749899	2.3749899
05:57.2	574408	6.35303E+12	5.43366E+13	5664.77	0.0187756	0.0196478	0.0778177	0.5809171	0.607903	2.3715634	2.3715634
11:00.1	574409	6.35303E+12	5.45039E+13	5675.15	0.0187756	0.019932	0.0777209	0.5809171	0.616696	2.368615	2.368615
16:03.5	574409	6.35303E+12	5.45039E+13	5712.4	0.0187756	0.0201859	0.0782311	0.5809171	0.624552	2.3841619	2.3841619
21:07.1	574409	6.35303E+12	5.45039E+13	5686.74	0.0187756	0.0225242	0.0778796	0.5809171	0.696899	2.3734522	2.3734522
26:10.3	574410	6.35303E+12	5.4739E+13	5682.68	0.0187756	0.0206965	0.0774898	0.5809171	0.64035	2.3615721	2.3615721
31:13.5	574410	6.35303E+12	5.4739E+13	5696.73	0.0187756	0.0215966	0.0776814	0.5809171	0.668199	2.3674109	2.3674109
36:16.9	574410	6.35303E+12	5.4739E+13	5721.55	0.0187756	0.0216764	0.0780199	0.5809171	0.670668	2.3777254	2.3777254
41:19.9	574410	6.35303E+12	5.4739E+13	5723.36	0.0187756	0.0214227	0.0780445	0.5809171	0.662818	2.3784776	2.3784776
46:23.0	574410	6.35303E+12	5.4739E+13	5753.44	0.0187756	0.0229512	0.0784547	0.5809171	0.71011	2.3909781	2.3909781
51:26.1	574410	6.35303E+12	5.4739E+13	5751.61	0.0187756	0.0234893	0.0784298	0.5809171	0.726759	2.3902176	2.3902176
56:29.0	574412	6.35303E+12	5.33495E+13	5783.15	0.0187756	0.0444265	0.0809138	0.5809171	1.374556	2.465921	2.465921
01:31.9	574412	6.35303E+12	5.33495E+13	5778.34	0.0236295	0.0250626	0.0808465	0.7310967	0.775437	2.46387	2.46387
06:34.9	574412	6.35303E+12	5.33495E+13	5717.03	0.0236295	0.0224619	0.0799887	0.7310967	0.694971	2.4377276	2.4377276
11:38.0	574412	6.35303E+12	5.33495E+13	5720.45	0.0236295	0.0232839	0.0800365	0.7310967	0.720404	2.4391858	2.4391858
16:40.9	574413	6.35303E+12	5.25253E+13	5714.68	0.0236295	0.0234838	0.0812103	0.7310967	0.726589	2.4749582	2.4749582
21:43.7	574413	6.35303E+12	5.25253E+13	5731.49	0.0236295	0.0221746	0.0814492	0.7310967	0.686082	2.4822384	2.4822384
26:46.8	574413	6.35303E+12	5.25253E+13	5723.09	0.0236295	0.0254915	0.0813299	0.7310967	0.788707	2.4786004	2.4786004
31:50.0	574414	6.35303E+12	5.19701E+13	5734.99	0.0236295	0.0253002	0.0823697	0.7310967	0.782788	2.5102894	2.5102894
36:53.0	574414	6.35303E+12	5.19701E+13	5744.23	0.0236295	0.0255777	0.0825024	0.7310967	0.791374	2.5143339	2.5143339
41:56.0	574416	6.35303E+12	5.19215E+13	5727.36	0.0236295	0.0254854	0.0823371	0.7310967	0.788518	2.5092973	2.5092973
46:59.2	574418	6.35303E+12	5.19586E+13	5734.35	0.0236295	0.0224637	0.0823788	0.7310967	0.695027	2.510567	2.510567
52:02.0	574420	6.35303E+12	5.25895E+13	5710.56	0.0236295	0.036317	0.0810529	0.7310967	1.123648	2.4701587	2.4701587
57:05.3	574421	6.35303E+12	5.25734E+13	5677.64	0.0236295	0.023519	0.0806102	0.7310967	0.727678	2.4566683	2.4566683
02:08.1	574422	6.35303E+12	5.2543E+13	5686.55	0.0268916	0.0219254	0.0807834	0.8320261	0.678372	2.4619458	2.4619458
07:11.0	574423	6.35303E+12	5.29406E+13	5686.98	0.0268916	0.0218438	0.0801828	0.8320261	0.675847	2.4436417	2.4436417
12:13.8	574424	6.35303E+12	5.28202E+13	5690.22	0.0268916	0.0219166	0.0804113	0.8320261	0.6781	2.4506078	2.4506078
17:16.6	574424	6.35303E+12	5.28202E+13	5676.93	0.0268916	0.0283	0.0802235	0.8320261	0.875602	2.4448842	2.4448842
22:19.5	574426	6.35303E+12	5.30049E+13	5683.45	0.0268916	0.0487112	0.0800358	0.8320261	1.507125	2.4391635	2.4391635
27:23.6	574426	6.35303E+12	5.30049E+13	5679.11	0.0268916	0.2372194	0.0799747	0.8320261	7.339568	2.4373009	7.3395682
32:27.6	574427	6.35303E+12	5.28466E+13	5693.6	0.0268916	0.2295848	0.0804189	0.8320261	7.103354	2.4508373	7.1033537
37:30.4	574427	6.35303E+12	5.28466E+13	5702.84	0.0268916	0.0489678	0.0805494	0.8320261	1.515064	2.4548147	2.4548147
42:33.4	574428	6.35303E+12	5.2354E+13	5719.96	0.0268916	0.0279098	0.0815514	0.8320261	0.863529	2.4853515	2.4853515
47:36.4	574428	6.35303E+12	5.2354E+13	5723.27	0.0268916	0.0281961	0.0815986	0.8320261	0.872387	2.4867897	2.4867897

52:39.2	574428	6.35303E+12	5.2354E+13	5713.35	0.0268916	0.0284418	0.0814571	0.8320261	0.879989	2.4824794	2.4824794
57:41.9	574429	6.35303E+12	5.15634E+13	5701.89	0.0268916	0.0240122	0.0825403	0.8320261	0.742938	2.5154886	2.5154886
02:44.8	574429	6.35303E+12	5.15634E+13	5699.76	0.0275399	0.0225376	0.0825094	0.8520845	0.697313	2.5145489	2.5145489
07:47.7	574429	6.35303E+12	5.15634E+13	5710.93	0.0275399	0.0233152	0.0826711	0.8520845	0.721372	2.5194768	2.5194768
12:50.6	574430	6.35303E+12	5.12815E+13	5715.01	0.0275399	0.0234875	0.0831849	0.8520845	0.726703	2.5351334	2.5351334
17:53.7	574430	6.35303E+12	5.12815E+13	5705.63	0.0275399	0.0238366	0.0830483	0.8520845	0.737504	2.5309725	2.5309725
22:56.5	574430	6.35303E+12	5.12815E+13	5712.82	0.0275399	0.0238261	0.083153	0.8520845	0.73718	2.5341619	2.5341619
27:59.5	574430	6.35303E+12	5.12815E+13	5735.12	0.0275399	0.0239167	0.0834776	0.8520845	0.739983	2.544054	2.544054
33:02.8	574430	6.35303E+12	5.12815E+13	5742.14	0.0275399	0.024794	0.0835797	0.8520845	0.767126	2.547168	2.547168
38:06.1	574430	6.35303E+12	5.12815E+13	5731.9	0.0275399	0.0244682	0.0834307	0.8520845	0.757046	2.5426257	2.5426257
43:09.2	574430	6.35303E+12	5.12815E+13	5731.35	0.0275399	0.0248106	0.0834227	0.8520845	0.76764	2.5423817	2.5423817
48:12.0	574430	6.35303E+12	5.12815E+13	5726.26	0.0275399	0.047908	0.0833486	0.8520845	1.482274	2.5401238	2.5401238
53:15.1	574432	6.35303E+12	4.99455E+13	5722.76	0.0275399	0.0287109	0.0855259	0.8520845	0.888315	2.6064774	2.6064774
58:18.0	574432	6.35303E+12	4.99455E+13	5706.12	0.0275399	0.0476729	0.0852772	0.8520845	1.475	2.5988986	2.5988986
03:21.0	574433	6.35303E+12	4.98413E+13	5718.48	0.027516	0.0268482	0.0856405	0.851345	0.830683	2.6099708	2.6099708
08:24.1	574435	6.35303E+12	4.97656E+13	5722.49	0.027516	0.0239382	0.085831	0.851345	0.740648	2.6157766	2.6157766
13:27.6	574435	6.35303E+12	4.97656E+13	5731.99	0.027516	0.024889	0.0859735	0.851345	0.770066	2.6201191	2.6201191
18:31.2	574437	6.35303E+12	4.98823E+13	5729.41	0.027516	0.0274338	0.0857336	0.851345	0.848802	2.61281	2.61281
23:34.4	574438	6.35303E+12	4.9928E+13	5727.98	0.027516	0.0263334	0.0856339	0.851345	0.814755	2.6097702	2.6097702
28:37.4	574438	6.35303E+12	4.9928E+13	5745.01	0.027516	0.0483259	0.0858885	0.851345	1.495203	2.6175294	2.6175294
33:41.0	574441	6.35303E+12	5.04581E+13	5733.7	0.027516	0.027147	0.0848189	0.851345	0.839928	2.5849309	2.5849309
38:43.9	574441	6.35303E+12	5.04581E+13	5748.11	0.027516	0.0269173	0.085032	0.851345	0.832821	2.5914274	2.5914274
43:47.1	574442	6.35303E+12	5.28842E+13	5748.64	0.027516	0.048425	0.0811386	0.851345	1.49827	2.4727723	2.4727723
48:50.4	574442	6.35303E+12	5.28842E+13	5745.02	0.027516	0.0346966	0.0810875	0.851345	1.073513	2.4712151	2.4712151
53:53.5	574442	6.35303E+12	5.28842E+13	5746.74	0.027516	0.026743	0.0811118	0.851345	0.827428	2.471955	2.471955
58:56.5	574443	6.35303E+12	5.28228E+13	5739.99	0.027516	0.0256215	0.0811107	0.851345	0.792729	2.4719226	2.4719226
03:59.3	574443	6.35303E+12	5.28228E+13	5735.16	0.0300224	0.0258636	0.0810425	0.9288931	0.80022	2.4698426	2.4698426
09:02.7	574443	6.35303E+12	5.28228E+13	5751.51	0.0300224	0.0247336	0.0812735	0.9288931	0.765258	2.4768837	2.4768837
14:05.7	574443	6.35303E+12	5.28228E+13	5760.39	0.0300224	0.0249539	0.081399	0.9288931	0.772074	2.4807079	2.4807079
19:09.0	574443	6.35303E+12	5.28228E+13	5759.7	0.0300224	0.0252528	0.0813893	0.9288931	0.781322	2.4804107	2.4804107
24:12.2	574444	6.35303E+12	5.21447E+13	5765.94	0.0300224	0.0251079	0.0825368	0.9288931	0.776838	2.5153845	2.5153845
29:15.1	574445	6.35303E+12	5.19166E+13	5760.01	0.0300224	0.028066	0.0828144	0.9288931	0.868362	2.5238421	2.5238421
34:18.0	574446	6.35303E+12	5.17083E+13	5752.55	0.0300224	0.0345945	0.0830402	0.9288931	1.070354	2.5307244	2.5307244
39:20.9	574446	6.35303E+12	5.17083E+13	5767.39	0.0300224	0.0278833	0.0832544	0.9288931	0.862709	2.537253	2.537253
44:23.9	574446	6.35303E+12	5.17083E+13	5759.99	0.0300224	0.0266611	0.0831476	0.9288931	0.824894	2.5339975	2.5339975
49:26.8	574448	6.35303E+12	5.19511E+13	5756.94	0.0300224	0.0267976	0.0827151	0.9288931	0.829118	2.5208172	2.5208172
54:30.1	574448	6.35303E+12	5.19511E+13	5735.1	0.0300224	0.0267019	0.0824013	0.9288931	0.826157	2.511254	2.511254
59:33.0	574448	6.35303E+12	5.19511E+13	5719.45	0.0300224	0.0300539	0.0821764	0.9288931	0.929868	2.5044012	2.5044012
04:36.4	574448	6.35303E+12	5.19511E+13	5702.8	0.0292181	0.0270051	0.0819372	0.904008	0.835538	2.4971106	2.4971106
09:39.4	574449	6.35303E+12	5.17328E+13	5699.65	0.0292181	0.0251577	0.0822376	0.904008	0.778379	2.5062642	2.5062642
14:42.6	574450	6.35303E+12	5.16724E+13	5715.01	0.0292181	0.0257413	0.0825556	0.904008	0.796436	2.5159564	2.5159564
19:45.6	574450	6.35303E+12	5.16724E+13	5715.9	0.0292181	0.0260754	0.0825685	0.904008	0.806773	2.5163482	2.5163482
24:48.6	574450	6.35303E+12	5.16724E+13	5710.01	0.0292181	0.0257615	0.0824834	0.904008	0.797061	2.5137552	2.5137552
29:51.6	574450	6.35303E+12	5.16724E+13	5720.01	0.0292181	0.0258404	0.0826278	0.904008	0.799502	2.5181576	2.5181576

34:54.4	574450	6.35303E+12	5.16724E+13	5725.31	0.0292181	0.0255507	0.0827044	0.904008	0.790539	2.5204908	2.5204908
39:57.2	574452	6.35303E+12	5.09821E+13	5720.01	0.0292181	0.0261083	0.0837466	0.904008	0.807791	2.5522533	2.5522533
45:00.3	574454	6.35303E+12	5.11925E+13	5714.05	0.0292181	0.026223	0.0833155	0.904008	0.81134	2.5391139	2.5391139
50:03.4	574454	6.35303E+12	5.11925E+13	5704.48	0.0292181	0.025018	0.0831759	0.904008	0.774057	2.5348614	2.5348614
55:06.5	574454	6.35303E+12	5.11925E+13	5709.99	0.0292181	0.0242779	0.0832563	0.904008	0.751158	2.5373098	2.5373098
00:09.5	574454	6.35303E+12	5.11925E+13	5711.52	0.0316117	0.0239833	0.0832786	0.978066	0.742043	2.5379897	2.5379897
05:12.8	574454	6.35303E+12	5.11925E+13	5715.02	0.0316117	0.0251484	0.0833296	0.978066	0.778092	2.539545	2.539545
10:15.8	574454	6.35303E+12	5.11925E+13	5705.02	0.0316117	0.024145	0.0831838	0.978066	0.747046	2.5351013	2.5351013