Astronomer in Wonderland: Historians-of-sciences


Universities’ science departments deserve to know the kind of mis-math (fn 13), hermaphrodite (fn 8&10), data-tampering (§§B-G), & idea-grabs (fn 10, §§C8) too often passing for scholarship in prominent but joke-referred (§2 fn 3; Rawlins 1991W fn 6) & cover-up-prone (fn 10, 11, & 97) in history-of-science, a field rife with smearings (fn 8), shunnings (fn 5&116; Rawlins 1991W fn 171&173), threats (fn 109), & rejection of normal science (bizarre details: idem & §§26; fn 100) if favoring heterodoxy, with research-advances’ acceptance contingent upon whose clique the discoverer belongs to. (Repepulants: Rawlins 2017E §§G3.) Further, there’s witty evidence that archons teach, value, or even understand (§§G5 & J1 [f], fn 42&106) exploratory hypotheses’ use, tempered by Occam’s剃刀 (§125, fn 33; §1 A.2, fn 49), to expand&define knowledge. The result (p.45 & §§B5-K-C) regarding advances in ancient astronomy, is inevitably more destructive than constructive.

However incomplete, the following chronology is a start towards top academic institutions’ enlightenment re contemporary history-of-sciences’ frailties. (Even while DIO values the field’s finds [e.g., fn 2 -127&§114, 2-2 fn 42], from which scientists have learned. Despite wan recapit. driver-) Methodological scientists’ scrupulous verification encouraged.

Volunteer referees welcome (since the perps lack the will&skill): dioi@mail.com.

Continuing the history-of-sciences cult’s staunch tradition of exiling and gang-smearing such math-competent, even eminent intruders as van der Waerden, R.Newton, H.Thurston: despite physicist D.Rawlins’ half-century of astronomical-historical researches (samplings above & p.2), a stand version, www.dioi.org/gjs/doc, of the following please-clean-your-house paper (with amiable cover letter), was inflexibly (fn 100) spurned in 2017 by the History-of-Society’s Isis (ultimo US hist-sci forum), which refused to evaluate its History or its Science, while unable to deny its accuracy, relevance, or multiple demonstrations of the most prominent historians-of-science ALTERING DATA (esp. §§C-D&F-G), uncorrected-unretracted mathematical formulas (§B4, fnm 27&97), dreadful science (§C5), even weird science (fn 2). (And see fn 4’s conclusion, for the Journal for the History of Astronomy’s DEFINITELY-original idea of refereeing.) Not to mention shunning of competent heretics’ scrupulously refereed research advances (§3), and systematic non-citation of the scientific-history journal DIO, though for over 25 years it’s been easily the most mathematically and astronomically competent in the science-history journal vol. 10 even very-exceptionally co-published (with the University of Cambridge), long supervised by boards of historically competent major, whose mathematical and ethical shortcomings DIO has been patching-up for decades without the slightest discernable (positive) effect on the field. E.g., three cornered History of science journals cut contact with DIO, when, e.g., (fn 97), asked to print the embarrassing but unquestioned fact that their icon Plutoem of our Sun “observations” were FIFTY TIMES closer to Hipparchos’ 2800-year old tables than to the outdoor sky, none doubting (§2 §§N8) Neugebauer-Gingerich-Science’s decree that an astrologer & clumsy faker whose frauds damaged&retarded predictive astronomy for 10000 (§2 A) was “The Greatest Astronomer of Antiquity” (fn 1 here). Have shunning, censorship, data-fudging, & viciously (§4 fn 2) defending naked fraud by a cult-glorified pseudoscientific superstition-peddler (long notorious among scientists) devolved from merely-tolerated to insistently-normative? Simultaneously with Isis’ resistance to the below, it was learned (see §1 here for links to all papers) that: (1) a 7-old DIO discovery (Rawlins 2008Q fn 6) had been unattributed published, www.dioi.org/cev.pdf, as Isis’ 2015 LEAD article (repair request repulsed), and [2] Isis’ pseudo-referred final 2016 LEAD article had extensively attacked Rawlins 1985G (Greenwich Meridian Cente­ral formulae for atmospheric refraction&extinction, Star Catalog, www.dioi.org/vols/w30.pdf, MNRAS 147:363; solutions of Greek Earth-sizes’ errors, Pluto-mass (fn 1) here for links to all papers) on ancient longitude accuracy (refereed & systematically non-citation of the opposition paper) on ancient longitude accuracy (refereed on its mathematical merits by a panel of prominent scientists), calling such accuracy a “delusion” — due to the critic’s own amazing delusions (fn 97): [a] Creating a solar eclipse as lunar, neither author nor Isis even yet realizing it sorta matters. (See.hist.icon Neugebauer’s able 1975 analysis at §1 [D]; so Isis’ cascading scientific innocence gauges hist-sci-decline since.) [b] Putting Spain into the wrong hemisphere. Rather than print DIO’s temperate Letter-to-the-Editor (§1), www.dioi.org/islg.doc, Isis Ed. H.F.Cohen fled (“I will not read, let alone respond to, any further messages on your side.”), play unanimously endorsed by his 30 Adv.Editors, www.dioi.org/isb.pdf, as Isis ducked refereeing the history or science of Letter or paper.

If this is the top of history-of-astronomy, one can imagine what’s going on underneath. But, then, actually, one need not imagine, since scores of examples of the field’s too-ordinary amusing scholarship are cataloged at www.dioi.org/jhb.htm, the oddest being “science” as credible as the Earth’s East Pole (Winnie the Pooh Chap.9): [a] the 1976 Dictionary of Scientific Biography 13:321 discovery of the Autumn Solstice and [b] Isis’ 2017 coverup of its 2016 sham-refereeing disaster (p.8 here: 7 largely­obvious errors, 2 of them crippling) is just the latest example of the level of equity, ability, and openness at history-of-sciences’ most eminent & incestuous forums, which now exist in a state of such evidence-immunity and no­consequences self­rule that they have for a 1/2 century been tragically & punitively insisting (awful details: §2 fn 49) on the very opposite of the manyways­obvious (§110) truth of an issue as central as Greek astronomical empiricism, meanwhile becoming ever-more-incapable of self-righting the field’s ship.

After decades of observing science-shy historians-of-sciences and watching limited mentalities (fn 8&96) like careerists Noel Swerdlow and Owen Gingerich be elevated to an eminence that empowers their dementedly vicious smears (e.g., fn 34 & photos linked at fn 6) of those merely disagreeing with them, one may wonder whether historians’ too­frequent encounters, with scientists appalled at also-too-frequent technical-goodness by history-of-science archons, have led to a defensive pattern (gameplan?) of curling-up into a self-protecting world of classicist-quotid history-of-sciences’ dooms (Rawlins 19948 §C4): “We don’t want the history of physics to be written by senile physicists.”

It’s pathetic enough that the history-of-astronomy cult’s overarching vision of ancient astronomy hasn’t advanced for decades. But when we find it’s actually retrograded, aggressively undoing long-accumulated perceptions of wise scholars, e.g., P.Tannery, R.Newton, plus eminent astronomer & pioneer Plutoem-exposer J.Delambre (2 centuries ago last year), then we might ask: [a] whether universities should keep implicitly endorsing such a field’s leashed research, and [b] if historical investigation in the mathematical sciences would be more opeminded & technically able if it were hence to proceed within, or sometimes in supervisory association with, the relevant science dep’t’s of those universities that value it.
History-of-science — Data-Tampering, Idea-Theft, Seminumeracy, Smearing, Shuns, Club-Preferring
Wellspring of a Projective Myth: Greek Science as Fumbling, Fabricating, and Unempirical
Muffia Cult’s 84\(^\text{1}\) War On Greek Astronomers’ Cornucopia of High-Accuracy Achievements

Current Historical Advances Endangered

Summary: Ptolemy’s Apologists as The Greatest Alibiers of Academe

Carefully crafted and refereed advances in the history of ancient astronomy and ancient mathematics:\(^\text{[a]}\) have long been exiled by centrist-journal editors who shamelessly flee (fn 100 below) whenever they cannot justify their actions, as observed 34 unprogressive years ago by Robert Newton (Johns Hopkins University Applied Physics Laboratory); and [b] are being smothered by a chauvinist battery of destructive, data-disrespecting — even data-fudging — papers, whose logic ranges from desperate to supernatural,\(^\text{[2]}\) displaying scant evidence of refreeing or such epistemic canons\(^\text{[3]}\) of scientific evaluation as simplicity, minimal-premises, fruitfulness, and predictivity. Auto-rejection has been inspired by durable permanent magnet (Diller 1984 fn 26) orthodoxy that the famed ancient data-faking (§1B), bumbling (§1E), mathematician-astrologer Claudius Ptolemy was “The Greatest Astronomer of Antiquity” (like hype at, e.g., fn 9) whose allegedly-outdoor solar observations\(^\text{[4]}\) 1 New early spherical trigonometry date, 2\(^\text{nd}\) century BC (fn 16-17&24 below); the same era’s 1\(^{st}\)-accurate trig tables & 1\(^{st}\)-accurate calculations (fn 37); 3\(^{rd}\) century BC Greek scientists’ use (fn 42) of order-of-magnitude (ordmag) and their adoption of degrees (fn 94). [Superscript glossary: §H.] JHA = cartel of JHA Journal for the History of Astronomy, O. Gingerich principal editor for 40\(^{th}\) & HAD (Historical Astronomy Division, Gingerich long-standing co-founder) of the American Astronomical Society, whose Ethics Statement has just demoted [2017/10/11] research ethics three notches: now behind [1] race&gender, [2] sex-triggers, and [ironic in present context] [3] bullying. DIO argues evidently for high Greek accuracy ([10]; Rawlins 2017E) vs Hist sci reverence for allibi-inaccuracy, to ameliorate Ptolemy’s gross fabrications, e.g., inverting relation of theory&evidence (Ragep crudely: fn 9), & focusing on Greek “theoretical structure, erected in spite of the enormous difficulties that beset the attempts to obtain reliable empirical data” prominently quoted by Gingerich 1976 p.477; see fn 8, 62, & 97 here. Neugebauer 1975 p.931 crowned indoor astrologer (Rawlins 2003X) Ptolemy “the greatest astronomer of antiquity”, echoed verbatim by Gingerich 1976 [AAAAS!]; & Gingerich 2002. Since Ptolemy’s Almagest contains much of what survived from ancient mathematics & math-astronomy, it has become accepted-in-practice that grantmanship requires continuing pretense that this invaluable astronomical handbook (the 1\(^{st}\) great modern translations call Ptolemy’s Almagest and Geographical Directory “handbooks”: see each’s title in References below) was primary science (fn 9), not derivative (which it obviously was: §2 §§M2&N20 here, or Rawlins op cit), whatever the cost to plausibility and ethics. Another JHA promotion of derivative science as primary: fn 120. 2 Consistently invisible auto-rejection of high-olds, perfect-hit solutions, which have the effrontery to contravene current orthodoxy, encourages vulnerability to adopting embarrassingly alternate theories, and thus (effectively) escaping into the miracle world of the supernatural, palming off — as valid scholarship — notions unworthy of a rational enterprise. For a HAD-wayouthouse of ultra-outr\(^\text{e}\) occultisms, see here at: §§C11, D2&D3, E2, G7-G9, G11, H4, I22; fnn 12, 33, 44&45, 55, 68&69, 89. 3 DIO’s principled approaches to knowledge are brought together below, at §J1 [g]. See, too, fn 10. hugely contra-reality super-adherence to 280\(^{th}\)-old indoor tables, is uncriminal since Greek astronomers were theorists not empiricists, who suppressed — i.e., destroyed — data inconsistent with prevailing models (fnn 8&9 below). The Princetitute’s iconic O. Neugebauer (Science seconding), “It makes no sense to praise or to condemn the ancients for . . . accuracy or . . . errors in their numerical results. What is really admirable in ancient astronomy is its theoretical structure”, a view defied by physicist R. Newton’s 1977 Johns Hopkins University book, The Crime of Claudius Ptolemy, and by D. Rawlins’ scientific-history journal, DIO (www.dioi.org/diomd.htm), which has fitted to attested ancient data scores of new heretical reconstructions (many evaluated below, esp. §I, with selected links), meanwhile asking how ancient astronomers copying predecessor could advance to their surprisingly numerous but herefore remarkably unappreciated high-accuracy Greek measures. (Below, compare §110 [& §11 D] to craniolithic cult-insistence on Greek inaccuracy: fn 1, 8 [I], 69, 93, & 584.) Also investigated: astrophysical myth of “theoretical” Greek non-empiricism & data-selection; Occamite resolutions of such problems as ancient Earth-measure by Pharos flame & double-sunset; the method explaining all 3 Greek-adopted monthlengths becoming undeniably accurate to 1\(^{st}\) or better (!); how all hitherto-unsolved lunar speeds were based on classical-era use of 13\(^{th}\) century BC Babylonian eclipse data ([§34]); pseudo-Aristarchos’ daily retrograde Moon & Archimedes’ degree-use (both obvious, yet unnoticed for 2000?: §§11&12 below); Ptolemy’s celestial fakes; Hipparchos’ elaborate and 1\(^{st}\)-accurate calculations, effected by 1\(^{st}\)-accurate trig tables; his use of spherical trig: Archimedes-admired pioneer in heliocentricity & spatial-vastness, Aristarchos: P’Tannery’s and DIO’s quadruply-verified (fn 88) reconstruction of his temporally-vast 4686 Great Year, 1\(^{st}\)-accurate monthlength, and pre-Hipparchos discovery of precession. One of R. Newton’s favorite expressions for counter-revolutionary mis-scholarship: A subtraction from the sum of human knowledge.

A Advances in Understanding Greek Science Endangered by Fudge Germinating Out of a Moated, Bloating Network’s Heresy-Phobia

A1 In the contemporary history-of-ancient-astronomy subfield, numerous coherent, mathematically-copper-fastened, expertly refereed, but archon-offending progressive discoveries have appeared for decades, elucidating hitherto-mysterious ancient data. When these offenses cannot be undone frontally, certain careerist serial knowledge-subtractors, — compactly called the Mufa or the JHAD (fn 1) hereabouts — have themselves made a discovery, to wit: that their network of politically centrist captive journals will help wage Ptolemy against heterodoxy by publishing effectively unrefered\(^\text{[4]}\) articles that:

\[^{\text{1}}\] Wikipedia’s article on the virtually unrefered Journal for the History of Astronomy [JHA] actually claims the journal is “peer reviewed!” (See fn 109 below, also re Wikipedia’s 2008-2014 war upon Rawlins’ Wik-biography.) Meanwhile, the best-refereed journal in the field, DIO, is repeatedly, aggressively classed by Wikipedia as Unreliable (not deserving an article, with bio-references to Rawlins as “publisher” persistently suppressed), though neither Wikipedia’s CSICOP-soldier administrators and associated threatening cult-vandals (repressive details also at fn 109) nor JHA have in years of trying and seething, managed to find incompetent scholarship anywhere in DIO’s score of volumes. Meanwhile, by a contrast that would be embarrassing to honest forums, DIO has (without even having to try) discerned dozens of flagrant examples of prominently-published history-of-astronomy catastrophes that nobody referred with care (or cared to referee): see fn 50&86 below and above at §I’s POSTSCRIPT; also www.dioi.org/jha.htm, www.dioi.org/fff.htm#sxrg. Historians-of-science seeking ready buddy-publication (to convince their universities and funders that they’re academically contributory) evidently prefer such laxity vs being refereed scrupulously, since far more vitae get padded by indiscriminatoseness than by care. Given the spectacular mug-frequency of the history-of-astronomy cult and its captive JHA, plus its distaste for wasting time on alien authors or on the bother of serious refereeing (fn 97&100), DIO from its inception has dubbed this inescus, self-perpetuating cartel: “The Mufa”. (Considering the history laid out in the current paper, who could resist such a fort pict amption?) A secret of maintaining eternal mufery is JHA’s rigorous refereeing of sufficiently
A] Noncite the heretical paper primarily targeted. **Deliberately:** §§C10, D6, G11, fn 10, twice more at fn 121. (This pattern goes back at least to the prominent attack on R.Newton by dutiful Mufosa Janice Henderson 1976, without citing his name or papers.)

[B] Exhibiting proclivity for the inherently improbable over the probable (even the most remotely of each: fnn 33&36&45), whenever seeking apparent evidential support for any cult-in-too-deep position threatened by new findings.

[C] Effect sterile destruction by demeaning or outright altering (e.g., §D5 item [C]; §F10 fn 25&85 [& see fn 30&11&83]) the data upon which an offending discovery is based, decreeing that whatever version of said data was previously accepted (right up until recently) is ready to be slanderously, if ironically, tossed now — of a sudden convenient — because suspect of unreliability, often requiring the subtractor’s own Expert revision or doctoring to have any hope of the data ever attaining cult–Acceptability. In-balance is the possibility that one or two or dozens of valid potential advances might languish indefinitely-recognizably, wasted.

[A2] Below, we analyse, in §§C-G, a flock of recent instances of such data-fudgery-for-orthodoxy, aimed at submerging competently proposed, compelling, but still-little-known heretical historical advances. We also append, in §B below, a score of potentially- heuristic examples of such advances where those, governed by agendas, shunning, & cliques — ever-attended by denigration of outliers — instead (of resorting to data-alteration) just

archon-oscilating contributors. One JHA Advisory Editor privately estimates no real refereeing is occurring, while another (who wanted DOI to stop refereeing at all, realizing it was the only way to compete with other Hist.sci journals!) believes papers by JHA favorites aren’t refereed, but rather preferred: straight-to-press unread (flagrantly, laughably clumsy Centaurus example written by JHA boardmember: fn 50 below), a practice additionally eased by JHA insistence on printer-ready (Rawlins 1991W fn 6) and wordprocessor (www.dioi.org/pm3.htm) submission. (Such conveniences are only exacerbating a trend already underway [as DR warned JHA, 38° ago: DOI 1.2 fn 6&[B]4] whereby “editors” become little more than printers. Note DOI’s typical instruction [in pdf, in asking an editor to edit.] And it shows. For us, JHA refereeing’s judicious deliberateness is self-extolled by proud 2013-2017 Editor M.A.Hoskin, www.dioi.org/pm3.htm, emph added: “It is quite common for an article received at breakfast to be refereed during the morning . . . and the verdict sent to the author by lunchtime.” For about 60 cases of thus-inevitable JHA-published odd and/or misconstructed scholarship, see: www.dioi.org/j111.pdf, items here at fn 10-11&86. No like list of botes debutting in DOI has ever been or can compiled. May be due to scrupulous DOI refereeing? At least until afternoon tea.


6 O.Gingerich, longtime head of Harvard’s History of Science Dep’t, defames Potemkin-skeptics, www.dioi.org/pm2.htm, in private communications. E.g., his 2000 referee-report to Isis innumeratey broadbrush-libelled the now-substantial (if largely silent for professional reasons) Potemkin-doubting party as just a tiny ‘paranoid’ bunch (§2 fn 5), merely for objecting to communal shunnings he and everyone else would know are real, fn 5 here; and www.dioi.org/pm1.htm, www.dioi.org/j43.pdf, ‘Naked Came the Arrogance’, Rawlins 1994S §§B5-B8; Gingerich, loc cit, and call-echo slander sampled at www.dioi.org/j111.pdf, DOI 1.1 §1 &7; also see fn 16&20, as well as ibid §3 §§D2-D3, vs §3’s fn 7. Establishment- servant Gingerich’s whackamole campaign to contain heresy is detailed at www.dioi.org/j43f.pdf. 1994. His refere report on sketches often pretend (between slanders) that it would be ever so good to have the other side heard (§4 §A2). Were this not sham, this JHA would hardly have gone decades publishing just Gingerich’s side of the Potemkin pseudo-controversy, protecting readers from exposure to DOI’s too-dangerous evidence-reasoning, impunitively ignore mathematically and logically solid but cult-displeasing findings for decades. This transparent behavior continues even despite 2002 national attention to “unprofessional” acts characterizing the Ptolemy Controversy (ancient astronomy’s hottest).

Are debate-averse conservatives justified in unprofessional contempt towards unprofessionally uppity heresy? That question is explored below, along with the field’s domination by dissent-intimidation & shunning, which has only solidified (fn 125) since 2002, perhaps from scientifically-shy historians-of-science haging shy of scientific critiques.

Which suggests several questions which may lurk behind superficial arrogance:

[1] Are their citations of mathematical scientists the only historians who fear their own subjects, deliberately and irrefutably, to slanderously, if ironically, toss contemporary, if remotely of each: fnn 33&36&45), whenever seeking apparent evidential support for any dissent-intimidation & shunning, which has only solidified (fn 125) since 2002, perhaps from scientifically-shy historians-of-science haging shy of scientific critiques. (This pattern goes back at least to the prominent attack on R.Newton by dutiful Mufosa Janice Henderson 1976, without citing his name or papers.)

[2] Are their depts like French depts staffed by pros who don’t speak French very well? And pretend it doesn’t matter. (It does: §7; Rawlins 2017E §K2; Rawlins 2018v end.)

[3] Is this too many historians-of-science cannot (e.g., §B4) admit mistakes (as scientists routinely do: R.Newton, B.L.van der Waerden, DOI 11.2 [on cover!], S.Goldstein, etc) & can be 100% sure teamplayer fellow historians-of-science won’t ever ask them to?

[4] Does that relate to the inverse: science-historians’ endemic reluctance to acknowledge non-club-members’ vindications? — a reflex which can reach such extremes (fn 17 & §F5) as to defy any known academic ethical code. (Outside sororities: Rawlins 2005SR Epilog.)

B] Hiding Modern Empirical Data: Boomerang Irony & Lawlessness

B1 When today’s Ptolemites are determined to justify what they already knew before investigating — the unscientific but cult-approved deed of destroying data needn’t be ancient. Apologists, for Ptolemy’s “observational” ordmag 1 error, claim it was normal for Greek astronomers’ to compute outdoor “data” indoors. Or to fudge alleged observations to agree with positions that were “theoretical” (i.e., computed indoors — so how does fudging differ from fabrication?) and throw away any that didn’t agree.

and (especially scary) competence.

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7 Schafer loc cit. But how “hot” is a controversy where virtually all prominent print is on one side? The censoring side.

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8 Historians-of-science remain imperceptibly loyal to the idea which DOI 1.1 p.10 fn 24 deems manifest, namely that ancient humanism is naturally ‘unprofessional.’ — a reex which can reach such extremes (fn 17 & §F5) as to defy any known academic ethical code. (Outside sororities: Rawlins 2005SR Epilog.)

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B2 In 1987, in order to justify the modern Ptolemaist vision of antiquity, JHA-Editor-in-
progress J.Evans published an uneconomically polite, technically pathetic, but politically 
brilliant Step-One towards becoming a Muñia Maid-Man by assassinating R.Newton’s 
credibility — anticipating full well the boost he’d achieve towards his ultimate Editorship by 
attacking JHA Editors’ bête-noire-Newton, i.e., telling ’em what they wanna hear, regardless 
of the cost to truth and to the reputation of one of ablest scholars ever to grace the field. (And 
regardless of whether Evans’ paper was valid. All that mattered to JHA was the attack’s 
teamwork-contribution to the pretense that Newton was as crazy as its cult’s unanimous 
unanimous unพิม政策-ster-slander was insisting: in 34. Which is why the parties soon proven right [14 §4] 
and Ptolemy’s Catalog were eluded, while those who were impenetrably wrong were 
elevated — the most-impenetrable lifted into the field’s politically-ultra Editorship. 
No surprises.) Evans’ paper tried alibiing Ptolemy’s ridiculously huge errors to his and 
his cult’s satisfaction, by adding three instances of grossly erroneous outdoor placement 
of a star’s position, from measurement of its angular elongation from the known-position 
Moon at mid-eclipse: Evans’ own 1981 Seattle observation of the star λ Sgr — the record 
of which has since disappeared without explanation — and two ancient observations of the 
star Spica vs the eclipsed Moon (Almagest 3.1) by Hipparchos in — and 134. The errors were all ordmag 1°: respectively, —40°, —33°, +33°.

B3 After in 1991 DIO showed (fn 10 below) these were not observational errors at all, 
a 2009 Rawlins paper detailed the precise explanation which shows that Evans’ three data 
ultimately support his conclusion’s opposite. 

**9** Rawlins 2009E 5A (emph in original), critiquing Evans 1987, 
http://journals.sagepub.com/doi/pdf/10.1177/002182868701800401, also Evans 1998 (appreciatively 
reviewed for its considerable merits by Thurston 1999D in DIO 8). Overview-question-in-passing: is 
there any reason other than ambition that would lead a scholar to look for a way to defend Ptolemy’s 
professorship where (as for the Moon-star case at hand) the evidence is too obscure for non-specialists to 
unambiguously identify? The editor has already for at least 1200 [IDB] known clearly, 
uncomplicatedly, high-schoolishly, arithmetically indoor-computed his four alleged “observations” 
of the Sun: §8 below. A textbook case of politics overwhelming reason — as it has, for ordmag a 
century of history-of-science’s ubiquitous, naked promotion-for-grant-profit of a known scientific 
criminal. (See, e.g., §2 or Pedersen 1993 p.599’s justification of Ptolemy’s massive indoor plagiarism 
of Eudoxos’ and Eratosthenes’ coordinates, after initially denouncing 1974 p.258 by asserting ordmag 
that Ptolemy had too much “intelligence”.) Further history-of-science contributions to ethical philosophy are 
amounced from the field’s heights by NYU’s A.Jones (who knows Ptolemy faked science [12 fn 2], but 
ranks true history [vs JHAD status] in canny political order): the Jones-edited 2010 Springer volume 
Ptolemy in Perspective (CaTech [1] 2007 conference, arranged by CaTech’s Swerdlov), is prefixed by 
Swerdlunov’s review, “Among the SCIENTIFIC authors of the Greco-Roman world, none gives us 
such a strong impression of writing for posterity as Ptolemy. . . . no reference to himself except as an 
OPERATOR, scholar, and theoretician . . . . Nor is there anything meretricious in Ptolemy’s efforts to 
give his SCIENCE a public face. . . . he . . . made astronomical OBSERVATIONS [vs below at §8] 
between the mid-120’s and the early 140’s of our era” (caps added). The same Jones-edited collection 
calls Ptolemy’s fakes “observations of the Sun” with mere “errors” (Swerdlow 2010 p.151), adding that 
Tycho “took the observations . . . of Ptolemy seriously” (ibid p.154), though Tycho deemed Ptolemy 
a thief&fraud and so dumped his fake data, *epochally discovering accurate precession thereby*: §2 
[A]; Rawlins 1993D fn 141. In this same CaTech collection, we’re told (Rapeg op cit p.126, emph 
added), in a typically (§2 fn 18) condemnationless history-of-science cliche “reply” to the fatal-for-
scientists revelation that Ptolemy indoor-faked allegedly outdoor data: “But let us look at this another 
way. Ptolemy decided not to tamper with the year[length] he had inherited from Hipparchos” (the 
very datum used to fake all 4 of his of-Euclid-of-Eratosthenes’ coordinates) “so as to have no 
tampering with data is the scientific-ethical requirement of real scientists’ tampering with theory when 
improving same: just two O.K.-options for resolving theory-vs-data conflicts! Consider the revelation: 
this CALTECH-SPONSORED expression of inside-out science is considered the epitome of DEEP 
non-judgemental thinking, in the history-of-science commune, where no one in authority seems able 
**to even tell a real ancient scientist from an occultist fraud**. And see 1 §§2&3 on the field’s robo-
brushoff of Ptolemy’s connexion to astrology, believing in reckless defiance of the awful truth [§11] 
that only unenlightened, “paradigm”-insensitive scientists could suppose it reflects negatively on him.

B4 We quote from this 2009 DIO paper, which so precisely & (ironically) solves JHA 
Editor J.Evans’ 3 boomeranged eclipse-based star-longitudes that, during the near-decade since, 
nobody of history has science ever acknowledged that the DIO paper even exists: 
Among the gymnastic hysteric-astronomy pratfalls enlivening JHA’s hefty 
(64pp!) James Evans double-lead-paper attack [Evans 1987], upon (then-
minority) Ptolemy-doubters, was Evans’ lordly illustration of [skeptics’] 
dumb overestimation of ancient [observational] accuracy . . . . [Evans op cit] 
n.50 (p.275) presents his own non-teleoscopic (cross-staff) 1981 July 16 Seattle 
observation-determination of the longitude of a star (λ Sgr) by using a lunar 
eclipse (as Hipparchos had) [measuring the star’s angular distance from the 
Moon when [it was] 180° from the Sun’s already-tabulated position] — which 
— among Evans’ reduction produced a longitude erroneous by —2°/3, thus according 
to him (identum) showing that the huge errors in some ancient observations 
were so ordinary that such were a poor basis for learning anything about an-
cient scientists [i.e., condemning Ptolemy’s gross errors]. As further examples, 
Evans specifically mentions (identem & p.235) Hipparchos’ two hugely disparate 
Spica data [also eclipse-based] . . . which disagree by over 1°. He then draws 
for us a [Ptolemaist] lesson (emph added): **No better demonstration could be 
vised of the uncertainty attached to the method** of fixing stars’ longitudes by 
ecylces. However, when instructor Evans repeats the very same sermon 
p.259 (“This shows the size of the possible errors in ancient measurements 
of absolute star longitudes”;). No surprises.) Evans’ paper tried alibiing Ptolemy’s ridiculously huge errors to his and 
his cult’s satisfaction, by adding three instances of grossly erroneous outdoor placement 
of a star’s position, from measurement of its angular elongation from the known-position 
Moon at mid-eclipse: Evans’ own 1981 Seattle observation of the star λ Sgr — the record 
of which has since disappeared without explanation — and two ancient observations of the 
star Spica vs the eclipsed Moon (Almagest 3.1) by Hipparchos in — and 134. The errors were all ordmag 1°: respectively, —40°, —33°, +33°.

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**10** A 1999/4/2 Evans letter boasted of aschanning DIO 8, allegedly not reading it (& its p.2 ex-
posure of his citation-integrity’s consistency; also fn 127 below). [Equal] honestly Perry deode at 
Bryce 1997 p.602.) Groundwork for further bibliographical sins? E.g., Carman & Evans 2015, 
www.dioi.org/je01.pdf, prominently published as original, *without attribution*, Rawlins 2008Q fn 6’s 
discovery by eclipsing it at Penobscot, Maine by only 18 days of Eruatism (i.e., telling ‘em what they wanna hear, regardless 
of the cost to truth), was already discovered & published for the 1st time 7° earlier at Rawlins 2008Q’s waystg eq.9, 
which *iis* leaned authors couldn’t see past. (To connect to a new world of Greek scientists’ ingenuity 
& precision which *iis* showed (fn 10 below) these were not observational errors at all, a 
2009 Rawlins paper detailed the precise explanation which shows that Evans’ three data 
ultimately support his conclusion’s opposite. 

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that Evans’ and Hipparchos’ errors. . . . WERE NOT OF MEASUREMENT BUT OF BASIC SPHERICAL-ASTRONOMY MATHEMATICS. . . . [Yet] when inedible educator Evans’ 1st-hand evidence somersaults, he just pretends he was right anyway, unable to admit DIO scored & “premier” JHA bellyflopped . . . Contra Evans, neither his own nor Hipparchos’ problems were observational. Both simply misconceived . . . valid observational data by using invalid math: the wrong sign for their parallax corrections . . . the [1981 Seattle] longitudinal lunar parallax p_\lambda was virtually 1°/3. . . . the sign mixup would naturally cause an error of . . . 40°, [i] & [ii] the laughably improbable two values (80°: 1982 fn 12 & §11 §0) “observational” log. . . . [Note: All data are subject to trivial error from ordmag 10 precision] & Ptolemy saw 12°. . . . The former amounts are obviously less credible than the latter, when set in the context of Hipparchos’ other known observations’ mean single-date scatter (fn 12): 0.1° for 3 lunar-limb-vs-Sun measures, Almajest 5.3:5: 2° for 17 solar equinoxes on Rhodos (mean’s traceable error 7°, mostly non-observational: Rawlins 2018U §B4. Almajest 3.1: 5° for 17 stellar declinations (mean’s error 0’±1: Table 2 below), Almajest 7.3.

B9 The ore-refinement findings by DIO for the three star-vs-ellipsed-Moon data raised by the Evans have shock-vindicated DIO’s longtime position that Greek scientists were empirical and accurate — and the Regulus case constitutes classic coherent theory-fruitfulness.

B10 Has Evans produced his 1981 written record, to refute DIO’s 1991-2009 stimuli? No. [Evans: fn 127 below;] and colleagues’ cooperative averted gaze (fn 11 above) is consistent with the dreary theory that they prefer their own flubs to be granted silence, in return. Mutual consequence-free lawlessness.

C Sphr’Trig’s Debut: A.Diller’s #1 Discovery Mobbed by Half-Fits

C1 Expressing them in stades north of the Equator, Strabo preserved a dozen-plus Hipparchan geographical latitudes L corresponding to what ancients called “klimata”. . . . narrow referee Toomer), Rawlins 1985G passim. [Rawlins 1985H,] Pro-Greek-competency: DIO 1.1 (1991) fn 24. Hipparchan measures of lunar limb-vs-Sun separation (Almajest 5.3:5) mean error 0°:1; 1992S 11.1 & fn 11.1; 1996R & ftn 271-272 & n.28 thereon (p.459), 5° after DIO 3 appeared. (Will scholars not following suit offer a coherent account of hyper-tender sensibilities?) In young Thucydides first published by a journal correcting an Evans mistake he pretends was never made? (But doesn’t say so. [Indeed, doesn’t say anything.]) And no historian-of-science asks. A rule fielded by fear for decades. But note that B.Schafer has admirably ranks on JHA-shunning of DIO 3.) More Evansscience appreciated in Rawlins 1992T §1-HH7 & fn 65, and at Rawlins 1993D §L8, where Evans is shown to unwittingly require Ptolemy saw 12° magnitude stars. (Ptolemy-Flamekeeper Evans in 2013 succeeded Toomer as JHA Editor. Utterly aptly. Interminably listing at www.dio.org/jhaind/htm, but, lest further examples of deliberately-ignored (recall 1999/A/2 letter, above) revelations of undeniably erroneous but never-retracted Evans scholarship. See also DIO 8 § 4 fn 4 on the unsuitably-absolute & inadverently non-empirical—empirical argument at Evans 1996 p.72, ultimately adopting (non-citationally) yet another DR original discovery (§4, DIO 1.1 §7 §C1); Rawlins 1991W §R9, fn 263&272; Rawlins 2008R fn17); Aristarchos’ 87° half-Moon elongation as not precise but a lower limit. And don’t miss www.dio.org/jhaind/htm&dgm, on Evans twice copying J.Dreyer’s prose without quotation notes. irony: DIO’s Tycho star catalog & the differently-important Hipparchos parallax-sign discovery, were both triggered by Evans’ own mis-apologia for icon Ptolemy. At Rawlins 1992T §H & Rawlins 2009E §A6, find our gratitude to Evans&Hoekin for each of these gifts. (Like thanks to Jones&Toomer at ibid fn 207&292; to Duke, §C14 above & Rawlins 2012V fn 22; to the whole Muffina at Rawlins 1991W §S3.) Evans’ modesty precludes him from citing any of these thank-yous. Compare to DIO’s rule of always correcting its errors — for both integrity and refusal to mislead readers: www.dio.org/erh.htm, as well as below at §14 & fn 98&110, also DIO 1.1 §4 §A2 (1991) & DIO 11.2 (2003) front cover & p.30. JHAD’s perverse reaction to the contrast neon its priorities for all to see. And eyeroll.


12 Rawlins 2009R fn5: “E.g., Rawlins 1982G p.263 & n.17 (dissed by Swerdloff, rejected by 1st
constant-L strip-regions extending east-west around the Earth, sharing the same longest-day \( M \) — which is mathematically determined by \( L \). Since klimata were used for Hellenistic horoscopes’ house-divisions, ancient astrologers tabulated them for every quarter-hour or so of \( M \). (Klimata tables are found, e.g., in Almagest 2.6. And phenomena are tabulated according to klimata at Almagest 2.8 for rising-times, at Almagest 2.13 for parallax.) In 1934, the eminent Egyptologist Diller expressed a connected, unexpected, epochal discovery: [1] all Hipparchos’ klimata were computed via spherical trigonometry, which in 1934 scholars doubted as available even as the 2nd century BC), [2] using an obliquity untested but the most accurate anciently adopted: 23°/23°.

**C2** Mafftightly speaking Diller as competitor not colleague. Neugebauer attacked these findings by 1934 letter, later publicly branding them “absurd” and not even to be “taken only by his own historically hilarious mathematical mis-steps: details in fn 97 below.

From H.Buckle History of Civilization in England 1873 (13:318-320). In medieval times “the credulity of men had reached a height which seemed to ensure to the clergy a long and universal dominion. . . . A book . . . sanctioned by [the most eminent] judges” recorded that the Carolingian hero Roland fought the Moors’ towering goliath Fenacute to no-decision until he “engaged his adversary in a theological discussion. Here the pagan was easily defeated” and, thus confounded, was quickly slain by the sword. When, despite being repeatedly informed of contrary evidence, our era’s equally eminent whistleblower-resenting SCIENCE journals (12 fn 11) disingenuously tend for decades Memnon Messenger Jesus-huger Gingerich’s insistence that his fellow-occultist&court-AlmaFester was The Greatest Astronomer, of an antiquity on whose ingenious empiricism (§3) Gingerich remains inevitably clueless, can we regard contemporary academy’s forums as any less deliberately mythmaking-for-the-cause than those of accurate history’s prior Dark Ages?

14 \[ L = \arctan \left(\frac{7.5\lambda}{\tan \varepsilon}\right) \] (\( L \) in degrees; \( M \) in hours); Almagest 2.3, Neugebauer 1975 p.38; further sample klimata tables, ibid, pp.706-736.


16 Diller 1934.

17 Diller’s perfection easily verifiable here at Table 1, or at Table of www.doi.org/gj03.pdf, Rawlins 2009S. **No JHADist agrees**. Yet the truth is plain to all but those controlling discourse, loomkewn even after 5/6 of a century of invincible non-innocence.


19 Rawlins 1994M Table 1, augmented in later prints, as previously unnoticed Strabo klimata surfaced, each unfailingly consistent with Diller’s theory. Most Neugebauerists received the 1st Diller-Rawlinson klimata table (Rawlins 1994M fn p.56). All ducked, with an unwillingness to acknowledge Diller’s vindication (or even a minim of merit) that was unashamedly, unblinkishly unanimous, even Britton: DIO 16 p.2 (2009). (See also Dicks 1960 pp.102-194, written when Dicks escaped the Neugebauer cult.) Neugebauer 1975 p.334’s half-truth theory is directly promoted by Toomer 1984 p.19. (F.Ragep 2010 pp.128-130 omits Diller and DIO.) Do those obscuring Diller’s 1934 insight even care about the dirt done a refined, dedicated scholar? During decades of insisting on fitless joke-mathematics, to deny him credit for his most brilliant strike, did any feel a tremor of human pathos? — when reading (Rawlins 1994M fn 7) of Diller’s late-life lift (at age 76) while his own discovery was “rescued 45 years later [most of his life having passed] by a phone call from a stranger [Rawlins] in San Diego.” See Boltzmann parallel at fn 108.

21 Rawlins 1994M fn 10 and Table 1.

22 Table 1 col.3 = Diller 1934 theory’s unrounded \( L \), nonfits (ere col.4’s 5 rounding) there underlined.


24 Diller 1984 Table 0. The 14 klimata: Equator, Cinnamon Country, Mero¨e, Syene, Lower Egypt, Phoenixia, Rhodes, Hellespont, Massalia, Pontos, Borysthenes, Tamas, South Britain, North Britain.

25 Jones 2002E. Scattered: p.17 n.9. Jones’ cited Strabo 2.5.38 Alexandria gnomon ratio 5.3 is just a common textual alteration: the original Greek is 5.7, which E.Honigmann&Neugebauer realized (uncited by Neugebauer-protégé & eulogist Swerdlow 2010 p.151) wasn’t a gnomon shadow-ratio at all, but the Alexandria klima’s shortest-longest-day: \( m;M \) (Neugebauer 1975 p.336); ignored (favoring Neugebauer’s 1975 p.101 n.1) by Jones op cit n.3, but the H&N idea’s fruitfulness is independently confirmed via Cartilage GD latitude (Rawlins 2009S fn 35): where same \( m;M \) mixup with shadow-ratio (in same Strabo 2.5.38) caused 1000s of North-Africa latitudinal map-distortion, (Rawlins op cit §4; similarly durable longitude-disaster for Aruba eclipse: Neugebauer 1975 p.938.)
of Hipparchos. Jones does not merely pollute Strabo’s klimata with these alien data from scattered other works of Hipparchos, but uses them as an excuse to shift the entire dozen, suggesting Strabo’s data could have been actually corrupted by addition of a constant, A = 100 stades (meanwhile Jones consistently miscomputes Syracuse’s latitude by 200 stades), which he argues must be corrected-for — thereby justifying-exercising his replacement of already-perfectly-fitted unmanipulated data, with sub-50%-fitted (Table 1) revised data. Seeing Jones extrapolating from a very exceptional klimata to the whole set, atheist DR is reminded of creationists who generalize from rare, anomalous geological strata to rejecting natural selection entirely. Obvious point against the significance of Jones’ disparate data-injections: he well knows that Hipparchos changed adopted parameters over time.

C6 Further, Jones (ignoring, 32\(^{2}/3\)‘s confirmations: [44: Rawlins 2009S fn 23&54]) accepts Ptolemy 1.12 testimony that Hipparchos’ ecliptic was Eratosthenes’ \(\varepsilon = 23^\circ 51’\); a value which Jones imaginatively attributes to a speculative Hipparchan computation from a conjured-up non-Hipparchan Alexandria \(\varepsilon = 31^\circ\), without realizing that obliquity \(\varepsilon\) would already be known since ancient finds it concurrently with \(\varepsilon\) and via solstices, not (as Jones curiously assumes)\(^{27}\) equinoxes.

C7 Jones also-traditionally alters the Almagest’s text for Hipparchos’ Marseilles latitude, from \(\varepsilon = 43^\circ 0’\) (consistent with \(43^\circ 1/12\) of the Potema Geographical Directory \(GD\)) to \(\varepsilon = 43^\circ 0’\), in order to reconstruct (using Eratosthenes’ \(\varepsilon\) \(2^\circ\) century BC BC Hipparchos’-Jones speculated indoor calculation-invention (for unstated reasons, and counter-chronologically) of Pythes’ well-known longago (c. \(300\) stollis nooin gnomon ratio, \(31.4^\circ\)) (whose precision argues it was an outdoor\(^{29}\) datum); and, to force the speculation’s success, Jones begs tolerance of an odd-but-convenient Hipparchan miscalculation, yet another ad hoke wrenching of ancients’ data. [While rejecting Table 1’s normal roundings!]

C8 Jones’ promotion\(^{31}\) of such jigsaw juggling seeks at least a half-share of Diller’s discovery. Worse: by fantastically alleging that Diller used invalid data, Jones (Neugebauer-rianly: \([\S 2]\) lodges his half-fitted theory — unvetted \([\S 10]\) and unbably-philosihical — as SUPERIOR to Diller’s ultimately-perfectly-fitting one. Though willing to refe Diller’s 1934 paper (with 2 nonts of 11 listed klimata, until DIO’s 1994&2009 upgrades: \([\S 3]\) [a] & fn 34 end), shunsoldier Jones dutifully, consistently refuses to acknowledge the bare existence of Diller’s 1994 vindication: DIO’s initial near-perfect 12-hits-out-of-13 table\(^{32}\) (though its merit is prominently recognized by H.Thurston \([Isis]\) & by G. van Brummelen’s meticulous standard history of early trigonometry [Princeton University]) — the final DIO \(16\) \(3\) update distributed in 2009, where the ultimate blemishless-fit perfection (Table 1 here) of Diller’s 14-for-14 victory is too irrelatable to deal with. Except by fleeing.


\(^{27}\) Jones op cit. Syracuse misconputed: Jones 2002e n.10. He also controversially if traditionally altered a key Alexandrian datum: fn 23 here. His highly Creative obliquity-speculation: op cit p.16. His preference for equinoxes over solstices for \(L\); Jones loc cit (spotlighted by Thurston); and below fn 96 vs Britton 1992 p.29. Non-Hipparchan Alexandria \(L\): Rawlins 2009S fn 30. Obliquity \(\varepsilon\) found concurrently with \(\varepsilon\) via solstices: ibid \([\S S2-F3 & F8, &眩, &眩12]\) & Almajest 1.12.

\(^{28}\) Original-text Hipparchan Marseilles \(L = 43^\circ 0’\) (Almajest 2.6), rounded at \(GD\) 2.10.8 to 43\(^{2}/3\)’12, often altered to 43\(^{1}/3\)’1’ (defining \(GD’s\) consistency with 43\(^{2}/3\)’0). See Rawlins op cit \(JH\). Achronology: Jones 2002e p.17. Pythes gnomon ratio: Strabo 1.4.5.2 & 5.41. Rawlins 2009S eqp.2-3.

\(^{29}\) Ibid Summary [a] & Rawlins 2009S fn 44.

\(^{30}\) Jones loc cit requires Hipparncians rounded 41,713 (41:42:47) to 41 4/5 (41:48); though 41 2/3 (41:40) is rounder & almost twice as nearby. F.Ragep 2010 p.128’s Jones-promo sees no problem here.

\(^{31}\) E.g., Jones’ foreword to recent (long overdue) reissue of Pederson 1974.

\(^{32}\) Initial Diller-Rawlins table of Strabo data compared to Neugebauer’s: Rawlins 1994p fn 56 [aptly augmented in later renderings, as noted at fn 19]. JHA-uncited for 24’ now, but noted by Thurston 2002S p.67, and by van Brummelen 2009 p.65. Final 13-for-13 version of Diller-DIO klimata table: www.dioi.org/vols/v50.pdf, Diller 1984 Table 0. The table’s subsequent 14-for-14 expansion: here in Table 1 or www.dioi.org/jg03.pdf, Rawlins 2009S Table 2.

\(^{33}\) Sensitivity: captio to Rawlins 2009S Fig.1, graphing Strabo’s 14 klimata (Equator & 12\(^{3}\)/4-19). DIO method of estimating multivariate-probability loci: www.dioi.org/biv.htm#xmw, comparing Neugebauer vs Diller-DIO, shows that above Table 1’s col.5 “Conv/Stadja/C3” (for Diller’s \(\varepsilon = 23^\circ 40’\), \(A = 0\), with \(L\) rounded to nearest 5’) counter-intuitively fits the data (col.7: “Stroba”) over 25% better than \(\varepsilon\) & \(A\) produced by least-squares (where also klima 14\(^{1}/4\) fails). Neugebauer 1975 uses 4 unknowns (Rawlins 2009S fn 7). Jones, 2 (ibid \([\S 3]\)). Do shrunken note Diller needs only one \(\varepsilon\) — to produce column 6 (“Round/Nearst/100 St”), the Diller-DIO theory’s predictions which anyone (but clenchedaw Muñifiis) can see exactly match column 7 (“Stroba”), the attested Strabo-Hipparchos data, via 2 tiny, normality-predetermined (\([\S C3]\) above) roundings. As these 2 standard nudgelets inject the finishing-touches, converting Table 1’s near-fit col.5 into perfect-fit cols.4–6, who but a cult-priest could see ultimate theoretical col.6’s exact matching to attested col.7 as but a demonic illusion by the forces of darkness, requiring heroic interventive exorcism by the forths of darkness? Specifics useful to the competent follow, for all 14 klimata. Derived from \(\varepsilon = 23^\circ 2^\circ\), \(A = 0\), Diller’s numbers (col.3) fit Strabo’s data (col.7), with squares-sum \(S = 88^2\) [or 89.83 arcmin-squared]. Applying bivariate least-squares finds \(S = 23^\circ 39’\) & \(S = 10\) & 25 stades, & improves to \(S = 82^2\). But for nudged col.4 (Diller-DIO) vs col.7, \(S = 62^2\). Fitting col.6 col.7, \(S = 0^2\). With 13 klimata, for Jones’ (col.9) \(\varepsilon = 23^\circ 39’\), \(A = 0\), & \(100\) stades (col.2), less than \(82^2\) (Unrounded stades & \(S\) for both men: www.dioi.org/biv.htm#dxs.) But Jones only fits 5 of 13 data vs Neugebauer’s 6, so cultish-cling to nonadmission of Diller’s triumph takes JHA from bad to worse.

\(^{34}\) Similar non-use of least-squares by ubiquitous MacArthur-Genius Swerdlow — who, in terror that academe will read revelations (www.dioi.org/jhb.htm) of his bumblings — smears competent scientists as cranks: DIO 1.1.3 \([\S S2-D3]\); see ibid \([\S 7]\). See Rawlins 1992V \([\S C1-C4]\) on curve-fitting (vs Evans’ notably accurate comparable curve [regardless of subsequent misuse]). For impossibility of Jones fitting the fiddled: Rawlins 2009S fn 3. Elimination of last Diller-Rawlins non-fit (ibid eq.3).
his theory’s doubtless-illusory woes: they are the unreliable party, having committed the offense of disagreeing with the theory of the most authoritative expert (here, in fn 86), adding that Hipparchos’ trigonometry tables are suspect of a parallel disloyalty. Meanwhile, DR contends that the glad & enlightening opposite is recommended — both for Strabo’s klimata data55 and for Hipparchos’ trigonometry tables — by Table 1’s 14-for-14 fit, cited above (fn 24). Jones is doing a convincing imitation of one who imagines those astronomical-odds-defying 14 perfect hits merely36 constitute a paranormal or religious miracle, with no significance or status in his people’s idea of the real world of science, where Occult’s Razor slices an illusion like a 14-hits-out-of-14 table completely out of that special bubble, convincing himself to the Orwelian-Greeckelamnes flames it deserves.

C12 Note: it’s been obvious since [the Rawlins 1994M investigation] that 1” accuracy is crucial37 for the 18° klíma’s fit (Table 1 above; or Rawlins 2009S Table 2), suggesting that the historical process of refinement of high-accuracy trig tables goes back further than generally believed, as successfully presumed throughout an earlier38 (1991) trigonometric DIO reconstruction of Hipparchan lunar orbits, discussed below, in §D and fnm 38&39. NB: We now have consistent confirmatory double-evidence for Hipparchan 1”-accuracy: [a] Table 1’s 18° klíma, as just noted (fn 37). [b] Below fn 46’s neat hits for attested e&R.

C13 Ironically, D.‘s rejection (fn 69 below) of that reconstruction unintentionally highlights the Hipparchan trigonometry tables’ accuracy. It just seemed incredible to Duke that DIO’s analyses (precised at §D here) of Hipparchos’ Almagest 4.11 eclipse-trios could possibly be reliable, from sensitivity to tiny uncertainties. Yet we have multiple-verification of those analyses’ validity, because Hipparchos’ calculations (fnm 24&52 here) & trigonometric tables were more accurate than previously believed by Duke or anyone else (including DR, before 1991 testing). So his/her/now’s ‘non-intruding doubts’ thankfully just emphasized the shocking newness of the discovery of Hipparchos-era 1”-accuracy computation & trigonometry tables: [1] the two eclipse trios (customarily called “A”&“B”) confirmed each other by both producing Hipparchan orbits based on Kallippic motion (period 365⅔/1) [2] new papyrus testimony vindicated in 2005 (§F4) both of the novel inductions of DIO’s 1991 analyses: [A] Hipparchos’ search for a ~157 Summer Solstice, [B] his contemporary passing adoption of Kallippic solar motion.

C14 None of these confirmations could have succeeded unless Hipparchos’ trig tables were indeed (as already indicated: fn 37 below) accurate to 1”, as later were Tolmeys (Almagest 1.11). Specifically, if DIO’s 1991 elicitation of lunar eccentricity e from Trio A had computed with a key trig function off by 1” (from slightly unreliable trig tables), Hipparchos would have found other39 than e = 327 2/3, the correct value, which is attested (§D1 below) & is found to agree (§D3) with calculation via 1”-accurate trigonometry tables. To repeat (§C12): [i] the Diller-klimata table’s 18° entry (here, in Table 1 & fn 37) and [ii] DIO’s eclipse-pair-based orbit reconstructive matches, both consistently establish the 2nd century BC as the earliest date we know 1”-accurate trigonometry tables existed. Concluding this section’s revelations, of sph trig & 1”-accurate trig tables & calculations, 3 centuries before Tolmeys: we recall the mentality that long ago locked-in establishment-wisdom here, Gingerich 1976 p.477 in Science (!), blaming his hero Tolmeys’s huge errors on (caps added) “CLUMSY mathematics invented only a generation earlier” (12 §M1 [b]).

35 Strabo’s number here is being repeatedly vindicated here (universally-accepted restoration noted in Jones 2002E n.9 conclusion), though his interpretations are fertile ground for reconstruction: e.g., above, in fn 25. Trigonometry-table “imprecisions”: Jones op cit p.17.
36 This, in a familiar chauvinist tradition we keep encountering here, e.g., in fn 25&65, and even more astonishingly at www.doi.org/hr/hmtemp, and below in §J. Computing odds against Jones’ theory (& Neugebauer’s): Rawlins 2009S §§J1, J3, & J6.
37 At the 18° klíma in above Table 1, 58° 12’ 31” rounds to matching 58° 14’; but 58° 12’ 29” wouldn’t.

D Lunar Orbits’ Plausible & Implausible Solutions — Hipparchos’ Mechanical-Computations’ Reliability

D1 As recounted in Almagest 4.11, Hipparchos investigated two lunar eclipse trios, both of which had occurred well before his era, usually called Trio A (~382-381) and Trio B (~200-199). Ptolemy reported that, for Trio A, Hipparchos had computed lunar orbital elements from the time-interval and longitude-interval between eclipse1 & eclipse2, and the same intervals between eclipse2 & eclipse3. And then did the same for Trio B. Hipparchos’ computational findings were, for Trio A (~382-381) orbital radius R = 3144 units, eccentricity e = 327 2/3 units; for Trio B (~200-199), R = 3122 1/2 units, epicyclic r = 247 1/2 units. G.Toomer tried an ingenious and daring reconstruction40 to recover these numbers, wrongly assuming (like Almagest 4.6&11 and modernly D.Duke) that Hipparchos had used Ptolemy’s sophisticated mathematical procedure (idem). Toomer combined this attractive and seemingly plausible theory with a more speculative one: proposing Hipparchos’ use of a 3438-based trigonometry table (as used later in India), presumably41 figuring that the crude proximity of 3438 to Hipparchos’ R values (above) was meaningful and that the R were not fixed at the outset but occurred during the math development and were never normalized, hitherto-unheard-of procedure. But ultimately Toomer couldn’t match any of Hipparchos’ 4 numbers.

D2 DIO instead started with the normal, conservative assumption that both orbit radii R were adopted at the start of Hipparchos’ lunar researches. A known (e.g., Almagest 3.1) user of Aristarchan data, he could have computed the R via Aristarchos’ famous 78° half-Moon elongation and a typically ordinally-rounded42 solar distance of 1000, as follows:

40 Toomer 1973; Duke 2008W p.286 also assumes Hipparchos used Ptolemy’s de’troit method.
41 Rawlins 2009S §§I,J. Vs conservative assumption of out-of-fixed orbit radius E: Thesatorn 2002S p.60. Ptolemy’s A&B’s & DIO’s fits are compared for all 4 parameters thereof in Carman & Evans 2015 (fn 106); Rawlins’ & DIO’s fits are compared for all 4 parameters of that reconstruction in Rawlins 1991W [J2].
42 Ancient ordinally-rounded Sun-distance estimates: Rawlins 2008R §§D-F. Sun-distance as historical order of origination: Rawlins 2012V §D. Reconstructed distances: [a] S1 = 100' Eratosthenes (Rawlins 2008Q eqs.6-13; nearly same at Carman & Evans 2015); [b] S2 = 1000' Hipparchos (§D2 here; Rawlins 1991W eqs.22-24; Rawlins 2008R eq.12); [c] S3 = 10000' Aristarchos & Archimedes (which Verhulst empirically showed was a rounder fit). Obviously-heliocentrist Poseidinos also proposed at least 10000': ibid §F2, probably on solid observational grounds: ibid §E4. Wise Greek realization that the Sun had such tiny parallax that its distance could be but crudely estimated was obviously reflected in ancient scientists’ repeatedly [a]-[c] setting the ratio of solar distance to Earth-radius at a power of 10. [Interlude for exceptions: [1] Hipparchos tried a variety of solar distances, at some point halving his 1000' solar distance to 500', thus solar parallax 7', later the inverted basis of 3348/377 = 491 1/20,000, Swerdlow’s valuable original discovery, ibid fn 39. [2] Arab astronomer Al-Battani foolishly used 1146° [180-60/π] plain overexact comput[ion] via round 3’ parallax. [3] Almagest 5.15 has non-empirical 1210'.] It is a reflection of the state of current history-of-astronomy and of history-of-science that the History of science Society’s Isis (toppe history-of-science journal) so failed to understand such a simple and fundamental development that it could publish as its Pb paper for 2015 an analysis co-authored by Evans (fn 10 above), Editor of the JHA (“premier” history-of-astronomy journal according to Schaefer 2002 p.40), deliberately-narrow-focus-arguing that Eratosthenes had a solar distance of 102’ (fn 106) — a transparently overexact value — rather than 100', as realized years earlier at Rawlins 2008Q (eqs.9-12) through common sense, antiquity-sense, & consistency with Eratosthenes’ long-known-actual argument (Rawlins 1982N) Earth-circumference, 256000 stades. What does it say about the(exp勃iory open-mindedness of history-of-astronomy’s current #1 archon when he figneg Eratosthenian solar distance = 2r·400000 stades/252000 stades = 102’; he allegedly never thought to explore-test by dividing (into same numerator) the 2 alternate C-candidates: Kleomedes’ famous 250000 stades (yielding solar distance 103’; Rawlins 2008Q eq.8), or DR’s provably-known-to-Evans-but-uncitable 256000 stades, which yielded 100’ within 1/100’ of 1% (ibid eq.11). To obscure his 1987 mania (§B above), Evans has also for 27’ now refused to withdraw his claim that he & Hipparchos wrote — MOST — atypical (§B8) now-saw the Moon outliers by more than its own diameter, & will keep on (fn 11) ducking (like Isis: fnm 13&100), trusting that academia lacks the integrity to reveal
Data-Fudgery for Myth&Turf  

By D.Rawlins

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D4 DIO's reconstructions [A] are consistent in method (for both trios); [B] are rife with ancient-typically round-number elements (Rawlins 1991W eqs.5, 8–9, 11, 21–23); [C] change no Almajest 4.11 numbers, these already long-established by Newton's learned 1977 analyses (§E below), & invent no convenient Hipparchos mechanical miscalculations.

D5 By contrast, Duke: [A] like Toomer, calculates R first for Trio A, then reverses course49 to satisfy Trio B, which doesn’t work, anyway, unless an extra variable d (hitherto not in evidence, in Ptolemy, India, Toomer, DIO, or elsewhere) is arbitrarily brought in to rescue the situation; [B] finds no round elements; [C] alters extremely precise numbers like 51°30'23" and 8°48'28" to instead become extremely precisely 51°19'37" and 8°48'06", respectively. Duke adopted E1H-there’s no resemblance of eccentricity to any dependent justification of fudgeries so shamelessly explicit, besides rigorous issuance of The Right Answer. All to smother DIO's natural-flow-multifit coherent solution under a pillow fluffy with special assumptions & tampering, resurrecting the spirit of co-subtractor Jones, above (in [C] & below) in (fn 85). Like Jones (§C10), Duke has refused DR’s request to withdraw the paper.

D6 The non-manipulated Rawlins 1991W fourfold-fit reconstruction (above, in §§D2–D3) is never cited throughout Duke's pranks (did hypothetical referees even know of it?), though his paper originated as a challenge to that very reconstruction, vying for a DIO prize, www.dioi.org/pri.htm, but evaluated and rejected by DIO prize-judge Thurston. It was later published by Centaurus. (After refereeing whose superficiality is shockingly obvious for math and even text.)50 Contra Duke’s attraction to committing fudging: throughout Rawlins’ researches, it proved unnecessary51 to ‘correct’ any of Hipparchos’ calculations in order to draw coherent results from his data, so a historically new conclusion52 emerged:

Hipparchos’ purely mechanical computations are dependably flawless.

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E Robert Newton’s Foolishly-Ignored Discovery of Hipparchos’ One-Degree Eclipse-Fudge

E1 DIO shows (in fn 56 below) Hipparchos’ –157 Early solar orbit “EH” was succeeded by his −145 prime-years’ orbit “PH”, in turn replaced by his −134 Ultimate orbit “UH”. He adopted E1H to show there’s no resemblance of eccentricity to any dependent solution of E1H & PH when computing lunar elements from long-earlier lunar-eclipse Trios A&B (§§C13&E2, F2, G2), but Rawlins 1991W fn 55, 1991W fn 56 and 1991W fn 58 respectively, each a neat match to the above (§D2) corresponding attested Hipparchos’ data: 273° 2/3 & 274 1/2. (Finding no mathematical error, Duke regards these matches, too, as just ANOTHER spooky double-accident.) H.Thurston & John Britton carefully verified all the 1991 paper’s supporting math & recommended publication. In 2005 soon-after-JHA-boardmember D.Duke deified those recommendations (despite Toomer’s honest acknowledgement53 of his 1973 speculation’s dubiosusness), resurrect-recycling it by altering – explicitly altering – Toomer’s numbers, to ensure its success by inventing teleologically convenient calculations. DR, recently expanding54 his 1991 orbit-reclamations, compares DIO-vs-Duke simplicities:

That History-of-astronomy’s present Ultimo Archen mis-signed his 1981 parallax-correction (§B4), but won’t admit so since silence helps keep alive the JHAD sacred cow of Grieg’s accuracy. So far, his great prestige of an objective’s honesty has proved perceptive. Ability-consistency of JHA Editor Evans’s record here (faithfully carrying-on the exemplary tradition of 1970-2013 Editor Hoskin’s grasp of mathematical astronomy: www.dioi.org/fff.htm#ffcy): [i] 1981–1987 failure to sign parallax correctly, and [ii] 1985 failure (on solar-distance) to understand that if Greek observing accuracy was on the order of 1° as Gingerich insists (Rawlins 2018F in 3), and as Evans echoes (item [i] or §B4 above), then since Eratosthenes’ parallax is given as an ordmag 1° (0° 56 at Carman & Evans 2015 p. 14), solar parallax’s uncertainty was ordmag 100% of its size [like §1 E5]. (Rawlins 2008R §C5 argues that Aristarchos suspected an even higher error.) So only non-scientist types like Ptolemy or JHADists wouldn’t realize that the JHAD-isis 102° distance’s ordmag-1% (!) precision is way-far too exact — when uncertainty is 2 ordmags looser. All this reveals an even looser grasp of Greek astronomy (ε& & elementary mathematical astronomy) by two of the world’s most deliberately-erroneous-history-of-science journals. Among famous classical Greek astronomers, only faker Ptolemy insisted on solar-distance numbers of such na¨ve way-overprecision, e.g., Almajest 5.14-16, while Hartner 1980 p.26 justly deemed a “fairy-tale” (like R.Newton 1977 p.198); yet another case where seeing Ptolemy as typical of his era, or even its dominant Greater, has warped history-of-science’s perception of actual science in antiquity.

Rawlins 1991W eq.23.

Rawlins 1991W eq.24. Confusion of arcmin & unit fractions: ibid in 251; Neugebauer 1975 p.166 n.3, & p.729 n.15; Thurston 2002S p.60. Only DIO’s theory (or an incantation?) explains the odd but Muffia-uncited circumstance (Rawlins 2012V §J5 that Almajest 4.11’s two R differ by less than 1%, For Toomer and Duke, that must be yet-another longshot-coincidence.


DIO item [C]. This should be obvious since [a] Almajest presents the data in pairs, after all!, & [b] pairs-analysis yields matches to the trios’ attested elements, while other approaches don’t. Inducing that Aδ, and εδ were pre-assumed, not sought: Rawlins 2012V §J. Pair-calculations’ matches of δ&r to Hipparchos’ attested values: ibid §§F2&G2, & Rawlins 1991W §N4, & Thurston, loc cit. (Doubling double-occultism: implicit in Duke 2005ST. Summaries in Thurston op cit pp.60-66&67. Toomer 1984 (fn 15 above) p.215 n.75; Dickens 1994 fn 42. Recycling: Duke op cit.

all 4 solutions had appeared earlier in the very DIO paper he is non-citing while trying to exile & replace it.

E2 Nociting Newton’s and DIO’s analyses protects readers from learning that, after application of Newton’s unexpectedly productive-predictive 1° correlation, Trio A is satisfied by unzany elements, which turned out — as discovered 14° later — to half be from the EH Sun orbit (already known from Trio B, §E2 below) and half from the familiar prime PH Sun orbit. Unless utterly coincidental (as Duke and Jones judge reasonable) or an evil miracle, the result reveals, that, at the time of his Trio A calculations (PH’s —145), Hipparchos’ adopted Sun orbit was transitioning from EH to PH, so he temporarily retained EH’s eccentricity and Kallippic mean motion (until their new PH tables were computed), while immediately adopting PH’s zeno-point & apogee (note needing tabulation). Subtractor must see as further mere-coincidences both the correctly-paired split (between tabulated and table-irrelevant parameters) — AND the temporal order matching §E1’s chronology, above. Coincidence piled on coincidence? Or shall we turn for guidance to Saturday Night Live, where ChurchLady’s Faith-Based epistemology at last unmask those who’s behind sinister DIO’s outrageously incredible, still-accumulating concatenation of impossible accidents: could it be — SATAN?!?

E3 We return-to & lodge an obvious ( & hereabouts typical) potential question to the 2008 article’s author, journal, & putative referees: should the reader be censorially denied the opportunity to decide for himself whether or not §E2’s astonishing but Centaurus-uncut halfhalf upshot is meaningful? — and thus whether R.Newton should be credited for a finding that triggered unanticipated progress, as valid discoveries will.

F Solar Orbit Reconstructions and Fruitfulness

F1 Hipparchos’ —145 Prime PH solar orbit (§E1) is famous, because adopted by Ptolemy (Almajest 3.2&6) & still worshipped by Julian over 500° after creation. But DIO reconstructed58 (two other PH orbits): his —157 Early EH orbit (§E1) & —134 Ultimate UH orbit (idem), each seriously differing from PH & previously unknown. (But Hipparchos’ use of a late non-PH orbit was presumably suspected before anyone by Britton a half-century ago.)

F2 Discovery of Hipparchos’ final UH orbit arose from calculations,57 referred and supported by Thurston59 & Curtis Wilson,56 based on realization60 that cunenform text (eccentricity & speed) that had to wait for adoption ‘til tabulated were naturally those that temporally stayed EH, while the 2 swiftly-adopted PH elements (zero-point & apogee) were constants thus needing no tables. Perfect manifold correlation-confirmation? Or more DIO witchery? 56 Ruskins 1991W §90 & Ruskins 1991H eqs.13, 17-18, 28. Prescence: Britton 1967 pp.45-47, noted at Ruskins op cit §H2. Hipparchos ( & Ptolemy) cited by Julian 1:429 (in “Hymn to the Sun”).

57Hipparchos’ ultimate improved data (~142 Autumnal Equinox, ~134 Summer Solstice) cause his orbit-reconstruction, thus shift from PH to UH: Ruskins 1991H §5c6-C13.

58 Thurston 1995. For IHA’s rewrite of this note to falsely credit Jones for a Ruskins discovery, see DIO 6 3 §D9. For JHA subsequent insistence on précising Thurston’s followup, to again avoid crediting the shunned discoverer, indeed entirely deleting his name from Thurston’s note: see ibid §H. Alex Jones’ retraction late but exemplary.

59 C.Wilson on Thurston 1995 ( fn 58 above): “I am glad both that the meanderings of Jones’ argumentation [Jones, ‘Computations’ — see below, in fn 86] can be set aside, and that Ruskins will have a little bit of recognition for the discovery of UH . . . . I have checked his calculations again and found nothing to quibble about. I hope your article will trigger some important re-evaluations.” (From letter, Wilson to Thurston, 1994/12/29, copy to Ruskins, with added handwritten note: “I hope there are some reverberations from Thurston’s article.”) Verbally, Wilson’s views on the state of the astronomy-history community (of which he was long the doyen and conscience [WHO NOW IS?] were stated more explicitly on occasion.

60 Ruskins 1991H eqs.1-31. Babylonian astronomy specialist Britton helpfully added that DIO’s estimated date, —100±5° (ibid eq.9), fit BM55555’s writing style.

BM55555 [ACT §210] (c. —100) bears a yearlength computed from Greek solstice data, an unexpected, shockingly-contra-orthodoxy discovery: 1° definite proof of what must have been substantial Greek influence on Babylonian astronomy (e.g., fn 120 & §N13). Backed immediately by Britton and long accepted near-universally; but lately unnoted, except opposed by Duke (non-citationally), using a faked Almajest 3.1 report: fn 70 & §F9.

F3 Recovering the UH orbit cleared up a half-dozen mostly-longlingering mysteries simultaneously (resulting DIO papers never cited by JHA):

[1] Why the Aristarchos —279 and Hipparchos —134 Summer Solstices are the only61 among the twenty-eight solar records62 of Almajest 3.1&7 where Ptolemy (who abhorred discrepant data) suppressed the hour — which we’d never have known, absent Babylonian cuneiform text BM55555.

[2] Hipparchos’ final three calculated positions63 of the Sun at Almajest 5.3&5 generally conflict with PH, but are all consistent with UH. (Jones accepts to accept this analysis.)

[3] When Almajest reconciles those true longitudes (via the PH orbit he adopted throughout the Almajest), he twice discards agreement with Hipparchos’ reported values (all computed

61 Below, §F9; or ibid §§B3 & B4. BM55555’s revelation: ibid eqs.6&8. I will ever be grateful to the late Willy Hartner, who was 1° to suggest (letter to DR 1980/8/15: ibid §A5) that scholars (including DR) were ignoring Ptolemy’s hour-omission for two of the Almajest 3.1&7 solar data.

62 See, e.g., the bizarre attempt at Neugebauer 1975 pp.273-274 & n.32, etc., contra ibid p.209, as noted below, at fn 127,) to claim that Ptolemy was a BETTER observer than Hipparchos, oblivious to their relative errors, random & systematic (Rawlins 1999 §E — the section of this paper which was suppressed by JHA Editor Hoskin, without showing error of any sort). This joke-inversion is based merely on roundings in Hipparchos’ semi-popular Commentary which are cruder than for his regular longitudes (Almajest 3.1&7.2) or declinations (Almajest 7.3). Neugebauer 1975 pp.642-643, deems Aristarchos’ data nonempirically faked (similarly Evans 1998 p.72 vs Rawlins 2008R §A, sardonically at §A3, condensing the most unexceedable of JHAD fantasies (empirical-citizen Ptolemy) into an un-observer-fabricator, while go-along-geocentrist & data-faker Ptolemy was antiquity’s ABLE observer. . . . If some oddities are more unique than others, then this one is uniquely unique.” Bringing the foregoing up to 2018: JHAD perception is that 1° known heliocentrist Aristarchos — who discovered precession and the scale & mechanism of the Solar System, knew the stars were at least thousands of times more remote than Ptolemy did — fixed the monthlength and sidereal year to high precision — was a minor, confused figure. But a fabricating, handbook-generating astrologer was the Greatest Astronomer of Antiquity. Or, as our counter to S&T’s gratuitous 2002 Feb smear noted, www.dioi.org/sti56.htm, “Aristarchos (was among other credits) a heliocentric pioneer in promoting realization of the Earth’s place in a huge universe. (Also, he evidently was aware of precession well before Hipparchos: www.dioi.org/jb24.pdf, DIO 11.2 [2003] §4 Appendix 2 §G8, He is not known to have been into astrology or theft. He bucked the establishment of his day, which threatened him for his new findings — an ancient prototype for the Galileo affair. Meanwhile, Ptolemy stole, mutilated, and fabricated data in order to fake the truth of the geocentric astronomy of the governmental (Serapic) religion which employed him [12 §N8]. Given their relative merits, one would think that the modern science establishment would admire Aristarchos and condemn Ptolemy. One would think.” Pondering history-of-science’s pollution of even scientific forums’ consensuses, a hypothesis suggests itself which is consistent with this grotesque historical-distortion-by-historians-of-ancient-science: in a grant-grubbing era, public history’s accuracy and balance is now determined by which figure left the most works. (From letter, Wilson to Thurston, 1994/12/29, copy to Ruskins, with added handwritten note: “I hope your article will trigger some important re-evaluations.”) Verbally, Wilson’s views on the state of the science profession inspirational?

63 In the 1991 May JHA Jones 1991H p.117 claimed it’s impossible to find a Greek orbit that satisfies these Hipparchos data, though all 4 elements of such an orbit had already been published by DIO (sources: fn 56 above).
by him from UH, unbeknownst to Ptolemy); however, the 2nd alone agrees (by chance, as it happens), though the underlying mean longitude he lists for it is discrepant by 5’ vs PH — even while tellingly agreeing to the arcmin with UH.

[4] PH orbit periodic error has amplitude 0.4, so it formerly seemed odd that the Sun-based Ancient Star Catalog’s periodic error is 0.2 — until recovery of UH, whose periodic error’s amplitude is 0.2.

[5] Hipparchos demonstrably used the young waxing crescent Moon to fix his fundamental stars’ longitudes (as earlier realized by M.Shevchenko 1990); fixes’ average Moon-Sun elongation was roughly 30°.

[6] For the 1st example, the 127 Autumnal Equinox, follows Meton’s sacred —431 Summer Solstice by exactly 304°/4, so 16 or 24 such intervals just equal the 4868° “Great Year” of Aristarchos.

Aristarchos, and of Hipparchos himself: if the latter invented a version of the 4868° cycle at 17780214 (not Aristarchos’ 1778022; §G below) it embedded an astounding quintuple of geometrically expanding cycles.65

Previous analyses never got past the 1st cycle of the five, e.g., Swedlow 2010 p.174.

F4 From fitting EH to eclipse-trio B, DIO mathematically induced (Rawlins 1991W §§K4-K9) in 1991 that Hipparchos’ earliest Sun orb, EH, [a] used a —157 summer solstice, [b] adopted Kallippic solar motion, 360°/365°/4 for Trios A AND B. Findings [a] & [b] were both previously unsuspected. But, 14° later, paper P.Fouad 267A was examined by A.Tihon (paper 1st presented: Peking 2005) & was found66 to explicitly verify 1991


65 Quinuple succession of doublings (Rawlins 2002A at fn 14’s conclusion): 304°/4 (1st difference between Meton’s —431 Summer Solstice), 360°/365°/4 (Hipparchan calendar); 360°/365°/4/10 (Hipparchos’ way-out-of-date solar motion); 360°/365°/4/10 for Trios A and B. Findings [a] & [b] were both previously unsuspected. But, 14° later, Rawlins’ P.Fouad 267A was examined by A. Tihon (paper 1st presented: Peking 2005) & was found to explicitly verify 1991

66 Tihon op cit. The papyrus’ Solstice-day —157/6/26 (correct) seriously differs from Hipparchos’ original false indoor-computed Solstice (—157/6/28), as reconstructed at Rawlins 1991W §K8, a point precisely resolved when Rawlins 2018U §K5 discovered both [1] the solstice’s hitherto-unknown hour, 18° (missing on the papyrus), and [2] the exact origin of the previously-unaccounted-for remainder of the papyrus’ Tihon-discovered novel tropical-Metonic yearlength, 365°/4 – 1°,90. On 2015/4/8, the community was alerted to all this by email to a participant — and to the posting of DIO volume 20, containing the 2015 version of Rawlins 1991W presenting these solutions, plus the 1st formula ever developed for finding solstice observations’ small ordmag1st systematic errors (from Earth-orbit eccentricity). ibid: eqs.10-13. Not to mention DIO 20’s 2nd lead, with its important fresh discovery—§J1 below of Archimedes’ 3rd century BC use of degrees. There has been no engagement on any point as yet, except for a somnambulist-refereed JHA paper, Duke 2008W, which (at its pp.293-294) doubts Greek observational accuracy by centrally confusing systematic error with random error, causing missing by a factor of ordmag 10 (see §F8 here, or Rawlins 2018U §B4). The paper’s author, though unable as usual to find mathematical error in the shunned proposal, nonetheless earns his place on JHA’s board in traditional (fn 4 below) fashion by attacking it, albeit frustratingly reduced to merely non-quantitatively implying that §F4’s three hits (upon the right year, and twice on the right solar motion) must have been just another trio of ID-like big&big&big coincidences! (Now do you understand the advantages of dispensing with real refereeing? Another at fn 4.) This Duke claim appeared soon after Tihon 2010 was presented at Catech in 2007, timing which suggests the possibility that the JHA perceived danger right away: the nightmare of general recognition of the foregoing triple-miraculous papyrus-vindication, of a banisher’s paper which had also satirically-advertised such typically-refereed JHA discoveries as the Velikovskian 360°-yearlength by Duke’s JHA co-boardmember Jones (Rawlins 1991W §G9,a DIO 4.14, 1994) — so the usually bungled lead-paper discoveries [a][b]. (Tihon has further shown that, c.—150, Hipparchos experimented with previously unknown versions of solar motion, epoch, & precession.)

F5 Reaction to DIO’s vindications has been less than inspirational — but valuably revealing, nonetheless. While still under the influence (fn 59 above) of the late Curtis Wilson, Jones gratefully asserted67 to UH; but nowhere has it been acknowledged that (repeating for emphasis) Rawlins 1991W and (fn 278&96) Rawlins 1985H revealed, years in advance of P.Fouad 267A’s surfacing in 2005: [a] Hipparchos’ search for a —157 solstice; [b] his tables’ use of Kallippos’ way-out-of-date solar motion; [c] ancient solstices were accurate to ordmag 1°.

F6 NB: These DIO induction-predictions aren’t side-issues. They are central to understanding the 2174 years of Hipparchos’ evolution from amateur-observer-astrologer into an immortal imperial scientist. And subtractors have been uniformly oblivious to a central steel connexion, revealing his original resort to calculating not observing his earliest, grossly erroneous Summer Solstice in —157, indoor-computed using the obsolete Kallippic calendar: this is the most conspicuously odd building-block of the lopsided EH orbit, accounting for most of why EH’s e/a were so disgracefully awful: e = 3°14/4 (vs 2°11/2 PH, & 2°11/10 actual), A = 44° (vs 65° PH, & 66°1/2 actual).

F7 In 2008, Duke, in yet another unrefereed Pb paper for JHA (whose board he had earlier silently joined while DIO Editor), scales new pinnacles of ancient-empiricism-denial, as he tries razing the entire basis of Greeks finding accurate orbits (such as PH&UH), claiming68 that their equinoctial solar declinations’ error averaged c.15’, nearly equal to the angle from solar center to limb!

F8 This is but a jawdropper case of confusing systematic error with random. The Duke paper’s Table 1 displays admirably well-computed times of Hipparchos’ equinoxes, whose errors are clearly sprinkled ordmag 0.1. Positively & negatively on either side of zero. Undoing Duke’s historian-usual (§§4 fn 43) listing of C—O as “error” (O—C), we see he more crucially overlooked that the Vernal Equinox O—C errors are all negative, while the Autumnal O—C are all positive, since the Rhodes equinoxes were subject to systematic error (found independently by 4 different scholars)69 which corrupted all these equinox de-identification (equally well-refereed: see challenge here at fn 70) was adduced to head off that hideous eventuality. (And without even citing Rawlins 1991W, the very paper whose thesis is being trashed! — a wise precaution, to prevent anyone from checking anything — also without mentioning that where the 4868° Great Year encompasses about 28° of Meton’s (Easter) 19° cycles. Details: ibid fn 17.)

67 E.g., the 1995 added note by Jones & (also creditable) Jones 2005. But here, in the neighborhood of above §C, and fn 85 below, there is double-irony in Jones 2005’s perfectly chosen titular quote from brotherdudder Ptolemy.

68 EH&PH elements compared at Rawlins 1991W: §§K9 vs §§K10. Duke 2008W pp.293-294 calls DIO’s reconstruction “creative” (due not to DIO error in the unimportant math but because said math is too “insensitive”, implying (fn 66) that §F4’s double-vindication by papyrus was merely spooky-lucky. These inexcusably (esp. §§6 here) citationless attacks are met in fn 37 above, and indeed had anticipated decades ago in Rawlins 1991H §J8 & Rawlins 1991W fn 205.

observations by that amount on average (while not affecting its solstices), an ordnag higher than his actual 2’ random solar-decination single-daturn rms error (or scatter).

F9 For Almajest 3.1, Duke’s Table 1 lists a UH-contracting Hipparchos –134/6/26 Summer Solst at near-PH-accordant noon. Pure invention. There is no such Almajest entry. (See fn 61&70 here.)

F10 Though fully aware of inconveniently-existing P.Fouad 267A, the same Duke paper nonetheless pretends that DIO’s now-papyrus-confirmed predictive hit-[a] & double-hit-[b] (§55 above), are ENTIRELY ACCIDENTAL — occultist shades of himself and Jones (fn 45&36, respectively).

F11 He calls the EH orbit “neither conclusive nor satisfying” since (emphasis added) “parameters deduced from trio analyses [fn 46 above], are very sensitive to small changes in the input.” CHANGES? It appears that orbit-challenged Duke explored resorting input again (as at $D5 above, item c) to data-alteration, but STILL couldn’t find alternate orbits [i] which fit all the relevant data of Almajest 4.11 and 5.3&5 — which Rawlins 2012V calls successively Trios A, B, and C — as do the EH – PH (“Frankenstein”), EH, and UH orbits, respectively; AND [ii] who underlying cardinal points (Vernal & Autumnal Equinoxes and Summer Solstice) uniformly hit upon Hipparchos’ standard 1°/4 precision — dawn, noon, evening — as all 9 cardinal points for EH&PH &UH (not to mention P.Fouad 267A: fn 66 here) conspicuously do. Duke has been publicly challenged (fn 70) to produce his alternate orbits. Nothing has come forth.


G1 The mystery of the scientifically-nonsense ancient yearlengths71 found on Vat. gr. 191 fol. 170v and Vat. gr. 381 fol. 163v lay unsolved through decades of fruitless disagreements (fn 87 here). The name of Aristarchos of Samos is written beside two of these yearlengths: τ ξ ζ ζ′ ζ′ ζ′ ζ′, and τ ξ ζ ζ′ ζ′ ζ′ ζ′. For (Rawlins 2018U) 1/4-day-cardinal-point Hipparchos with [§51 & fn 69] distinctly alternate elements: Rawlins 2018U §N2.

G2 Taking the numbers exactly as they stand and allowing signage-flexibility,72 Rawlins in 1980 treated73 both Aristarchan expressions as continued fractions, and swiftly sent the results to the Journal for the History of Astronomy.74 Listening to Neugebauer’s perspicacious discovery: 60 that could signify 600, Rawlins saw that the 1°/4 expression could be viewed as 365°1/4 [+ 1/20 (+2/60)] = 365° 1/4 – 1/4868, a classic Metonic “tropical” year, quite close25 to the known (also seriously false) tropical yearlengths of Hipparchos & Ptolemy. The 2° expression suggested 365°1/4 [1/10 – 1/4] = 365° 1/4 + 1/152, differing but ordmagn 10° from the actual sidereal year then (fn 114 below).

G3 Both results’ implicit periods, 48687 (Great Year) & 1527 (2 Kallippic 76’s cycles between iconic Meton’s and Aristarchos’ Solstices, –431 & –279, respectively), are among the EXTREMELY76 few numbers long known to be relatable to Aristarchos, and the difference between the 2 induced yearlengths IS precession, the very discovery traditionally mis-ascribed to Hipparchos. Said difference is close77 to 1°/century, which presumably later influenced Hipparchos to treat 1°/cy as a lower limit, though Ptolemy eventually adopted 1°/cy exactly (Almajest 7.2-4). Note that Aristarchos is the only astronomer on the Vatican mile capacitor for two different yearlengths, obviously suggesting precession. As the 1°/century astronomer we know was a public geomobilist, he is an apt candidate for true discoverer of Earth’s precessional wobble.

G4 To measure the Moon’s motion & apogee, ancient scientists wisely chose (Almajest 4.2) the 4267 month eclipse cycle for its 126007.530594, correct (even today!) to a fraction of a timesec. Aristarchos’ 223-month cycle vindicated U’s exploration of the 4267 Metonic “tropical” year: quite rightly suspected26 of the ring’s settlement (§10 & fn 12 below). See Rawlins 1982G fn 17 & Rawlins 2018U §B4.


Rawlins 1999, with welcome 1982 assist contributed by Owen Gingerich (cited ibid fn 7), regarding the utility of negative signs in continued fractions.


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precisely produces day-interval 1778037[^4], Aristarchos' Sidereal Great Year of 4868 — results which yield:

**Discovery #1:** The Vatican mss' Aristarchos-marked year, 365\(\frac{3}{4}\)1/4 — 15/4868, is certified as Aristarchos' by its denominator's match to his 4868^\text{Great Year}, as already identified by P.Tannery.

**Discovery #2:** Merging

\begin{align*}
&\text{[A] Aristarchos' Great Year, [B] his M (G4 above), & [C] Meton's famous lunisolar relation} \ 235^\circ = 1^\circ, \ \text{we next arrive at a vindication for the kind of exploratory hypothesizing (§31 [f]) that can occasionally move knowledge ahead: 4868 years of 235/19 each equals Aristarchos' Metonic Great Year, 1778022^\text{c} \ (15^\circ \text{less than his Kallippic 4868^\text{Great Year}). Dividing by 4868 to find the cycle's yearlength G5 produces} \\
&365^{\frac{3}{4}}\times 1/4 — 15/4868, \ \text{perfectly matching the figure (Discovery #1) independently found} \ G2\ \text{two decades earlier from Vat. gr. 191 fol. 170v:} \ \text{classic predictive success. Nonetheless, Muffiosi typically refuse to cite (e.g., G11 below) the confirming evidence. Jones even goes out of his way to destroy (§G8 below) evidence for Aristarchos' multi-obvious possession (c.280 BC) of a monthlength accurate to a fraction of a time-sec, the better part of a century before Greek-conquered Babylon is known to possess such (c.200 BC) — possibly, just possibly, because pan-Babyloniastians have made a living contesting that the origin of such wisdom and precision is to be found only in the cuneiform tablets of a plainly inferior, scientifically-unsophisticated and triggless civilization (fn 120; §2 [N13], which their cult has become permanently, undeterably in-love with?}
\end{align*}

\[^{G6}\] We can also merge both cycles found from the Vatican mss (§G2) by noting that 152^\circ is virtually 1/32 of 4868^\text{2}, which allows us to see [2017/6/6] that Aristarchos' Sidereal Great Year is 32^\circ longer than his Kallippic Great Year, thus 1778069^\text{c}. (Heath 1913 p.315's reconstructed year, showing Aristarchos toyed with a day-rounded exeligm, is an admirably clever revelation, but not sidereal.) The sidereal year must therefore be 365\(\frac{3}{4}\)1/4 + 32/4868 = 365\(\frac{3}{4}\)1/4 + 1/(152+1/8), or about 365\(\frac{3}{4}\)1/4 + 1/152 (which of course matches §G2's Vat. gr. 381 fol. 163v's yearlength). [Since 15\(\frac{3}{4}\) + 32 = 47, we see (2017/12/27): by Aristarchos' Great Year scheme, precession is 47^\circ/4868\text{, roughly a degree per century.} Summarizing: the two continued-fraction solutions we found to be embedded in the Vatican mss' data, were derived by him from his Metonic Great Year of 1778022\text{c} & his Sidereal Great Year of 1778069\text{c}, resp. The latter's obvious parallel to the former just adds to the astonishing multiple-vindication of the two solutions drawn from the Vatican mss.

\[^{G7}\] But pre-knowing that such redundant success is just superficial DIO witchcraft, teamplayer Jones volunteered to confront an awesome challenge: to alter to evidence, to undercart a paper that doesn't, and how to trash into chaos coherent\&kontampered inductions which twice accurately extract cycles (4868^\text{2} & 152^\circ) connected to the very astronomer — Aristarchos — explicitly named in each instance right on the Vatican documents.

**G8** Though Rawlins' math is ineluctably rigorous, subtractor Jones won't be denied & so nimblly sideways to a sly Gordian tactic: erase all accents on the mss (the cripple—tripple ploy of fn 88), which automatically, deliberately wrecks the data-basis for Rawlins 1999's refined, precise inductive journey from Vatican mss to [1] ancient science's ingeniously constructed (Rawlins 2002A §A] & modern induction's 4-way (fn 88) reconstructed 4868^\text{Great Year} [itself from superaccurate M; §§G4–G5, www.dioi.org/jb11.pdf, eqs.5–7, & [2] Aristarchos' sidereal year 365\(\frac{3}{4}\)1/4 + 1/152. How does such holy warfare differ from the Taliban? [Query: erasure of ancient astronomy historians goes NYU-InstStudAncWorldDirector Jones' deleting all accents from the mss of the Almagest?!]

Like-Talibanish is his authoritarian justification for across-the-board wipeout: decreeing accents on Greek mathematical data are destroyably worthless in HIS expert judgement.

[^6]: Dozens of similar DIO vindications are collected at www.dioi.org/vin.htm.
[^7]: DIO's exact confirmatory hits here are akin to R.Newton's also-years-later fruitful success: §§E3, §F1 Jones 2010A p.21. Counterevading by eliminating accents: ibid n.27.
Pliny’s Circuli: Deft Ancient-Trig Approximation-Inventiveness

I1 Now for a case of ancient data-tampering that actually happened! — the very sort which modern-chaouvinist tamperers have, with dedicated persistence & Creativity, tried misprojeceating 89 onto valid data (above §3C-G) that commit the crime of being inconvenient to prevailing Muffa preconception.

I2 Neugebauer classified the seven “circuli” of Pliny 6.39.211-218 as a primitive “arithmetical”90 scheme, deeming their superficial inaccuracy to be supportive of his contra-reality (fn 8 above) insistence on “the absence of any scientific organization in antiquity”, a conviction which he thought helped (along with his reasoning as covered in fn 1 here) to exonerate accuracy-challenged Ptolemy. But the 1st — and still only available — coherent solution (fn 91 below) ever devised for the circuli indicated they are no more arithmetical than Hipparchos-Strobos’ klimata (which Neugebauer deprecated similarly: fn 18 above), proposing that Pliny’s circle is instead trigonometric (as are Hipparchos’ klimata) and a case where it is reasonable to test91 for possible ancient data-alteration, since all seven circles are clearly a version of the traditional Seven Klimata.

I3 Fit-probes upon them initially produce ridiculous, yet trending obliquities. Experimentally shifting all circle M by the same simple round constant, 1/15 (or 4/164), finds gratifying consistency with the same accurate Hipparchian 23°2/3 obliquity discovered by Diller and insubstantially & cementally rejected by Neugebauer&Jones (fn 18&25, resp).

I4 Rawlins’ 1984 paper (invited for the Greenwich Meridian centenary Longitude Zero Symposium), featuring its 1°-constant-shift solution (fn 91-93 here) of the circuli, has never been cited by Jones, though his own pale constant-shift ploy for the Hipparchos-Strobos klimata (§§C5-C10 above) is either suspiciously or parapsychologically similar, with the difference that Rawlins’ constant-shift solution for circuli turns chaos into coherence, while Jones’ constant-shift for klimata is subjectively designed to accomplish the very reverse, leaving such a poor fit to the data that he doesn’t dare even tabulate them (fn 34 above). Jones mentions Pliny’s circuli but simply calls them “crude”92 (in the Neugebauer tradition, fn 18 above), never telling readers that Rawlins’ restorative-correction procedure — which is just as elementary and trivial as his own failed (fn 34) klimata-echo of it — reveals a trigonometric scheme whose cleverness is crudeness’ antithesis. Nor does Jones’ circuli-puzzle tout tell readers that these restored Pliny rest data are consistent with (fn 92 here) the very same accurate Diller-discovered 23°2/3 Hipparchian obliquity Jones is busy trying to

89 Conversely, our tamper-projectors staunchly spurn restoration for either of our cases here where its need is screamingly obvious: Trio A’s 3rd eclipse (fn 54 above) and Pliny’s circuli (present chapter). An awesomely perfect psi-missing record for perceiving when data-correction is and is not appropriate, and, as ever, proving that DIO’s simple, neat fits are mere décalé coercion.
91 Rawlins 2009S Fig. 1 fn 46-48&50 belatedly weedv indica that Hipparchos himself probably designed the circuli (contra this: one would expect Pliny to have attributed), but more accurate than one might expect from their numbers’ roundness, a familiar ancient circumstance (e.g., §D4[B] above) & see evaluations at Rawlins 2002A §§A6&A11.
92 See Rawlins 1985G, comparing eq.11 vs eq.12, where an ancient scholar’s well-intended but uncomprehending 1°-shift-of-M-data is explained at p.263. All of the circuli shadow data are expressed in feet except for the Rhodos shadow, which is listed as 100 inches. Resolution (ibid n15): 105 in Latin was written “cv”. The “v” was mis-taken by an ancient scribe as an abbreviation for “vinciae” [inches] thus 105 corrupted to “cv vinciae” (100 inches). As we now find in Pliny. Once this is realized, and other data are checked, it’s obvious that 105 is the common denominator to all seven shadow ratios (but Rome) & is key to the equation (ibid eq.11) that originally generated the Pliny circuli (ere ancient alteration to eq.12).
93 “Crude”: Jones 2002E fn 11. Or clever? See restored circuli’s smoothly and flawlessly spring-tracking curve, graphed in Rawlins 2009S Fig.1, in hollow dots: close proximity to the curve of the Diller-Rawlins-Rawlins obtained (DillerRawlins-Rawlins, §C5-C10 above) over the restricted Mediterranean range (much smaller than Diller’s) for which the circuli were designed.
96 Those wondering whether Swerdlow&Gingerich are primarily scientists or careerists, cannot miss their amusingly indiscriminate alibis for Ptolemy’s fakes, at www.dioi.org/jk02.pdf, Rawlins 2018U §§B2&B3 and fn 2&3. (And Duke at fn 69 above, vs Rawlins op cit eq.5&21 Table 3, §E3E-J. Alleged solstice-inferiority: fn 27 here, Evans 1998 p.206, & Swerdlow 1979 [Phi Beta Kappa] p.527. Noel Swerdlow, though occasional valued discoverer (e.g., fn 42), is a prime contributor to HIA’s ‘pseudo-Aristarchos’ line. Besides science (see §4B1 & on Swerdlow’s & Evans’ innocence of equal-altitudes, the obvious ancient solstice-finding method, there are unambiguous historical points they’re equally (and, as purported historians, less excusably) unaware of (unlike non-politicians such as Toomer 1984 p.12 & Britton: all known ancient scientists found yearlengths via solstices not equinoxes: Meton, Euktemon, Callippos, Dionysios, Aristarchos, Hipparchos, BM55555. And these doubters of ancient’s solstice-accuracy (plus fn 27: Jones) are now confronted with recently recovered papyrus F.Pouad 267A, testifying to a Hipparchos solstice accurate to ormdagh 1° (4 fn 20[C]). Preferring solstices over equinoxes for year-length-determination becomes
be good to ordmag 1°, which invites equinox-vs-solstice accuracy-comparison (§27 N7).

Rawlins 1991H found the Babylonian yearlength on famous Astronomical Cuneiform Text 210 was (§F2) based on well-known Greek solstices (~431/627 & ~134/626), the 1° datable transmission of an orbit-element between Babylonian & Greek astronomy, going Greece→Babylon, thereby getting the Muffia’s holiest tenet ([337&fn 120).

Aristarchos & Archimedes put minimum solar&stellar distances at 10000&10000 AU, resp, because humans can see (as no historian-of-science seems aware) to c.1/10000 rad. Rawlins 2017E §K2: “For advancing history of science, knowing science matters.”

Ptolemy’s allegedly-outdoors 4 solar “observations” (132-140 AD: Almajest 3.1&7) averaged over 1° error (not even 1 shot encroached anywhere on the solar disk) and were fifty times nearer Hipparchos’ 3-century-old indoor tables than to outdoor reality (as known for 1200+ F.Ragem 2010 p.121): undeniable but also (for over 300) JHA-unprintable §9: despite to null ancient attestation of their speculation, Ptolemites insist (fn &127 this) is because ancient scientists kept only observations agreeing with theory. (i.e., they cheated.)

A. How could Ptolemy’s solar “data”, all off by a degree happen in the 1° place, outdoors? B. How did it happen that Hipparchos’ Sun observations’ average disagreement with reality were merely two or three times their disagreement with his tables, vs Ptolemy’s fifty?

C. How could Greeks just copying predecessors achieve their many accurate discoveries? (E.g., Greek vs real ancient monthlengths, Rawlins 2017E §§B2-B4: startling proximity.) However, most scholars (A.Pannekoek, R.Newton, Y.Maeyama, J.Brandt, & P.Zimmer among the welcome exceptions) reject ancient high scientific accuracy (fn &35 here), undeterrable 2016 subtractor D.Shcheglov even (fn 13 here) calling it a “delusion.”

Aristarchos discovered precession 150° before Hipparchos: §G3.

110 Rawlins’ orb-of-magnitude estimates, of too-underline magnitudes of Ptolemy’s accuracy (11 §F): 1° for lunar-solar diameter; 1° for moon distance; 1° for solstices; 1° for equinox taken on Alexandria’s ring (fn 70 here: Almajest 3.1); 10° for sidereal year (fn 114 here); 1° for observer latitude (see fn 39&100 here and §4’s Table 1 & fn 38); 1° for 500-mile North-South arcs on Earth (fn 111); 0°.1 for star declinations (fn 100); 0°.1 for lunar-limb-vs-Sun gap (fn 12 here); 0°.1, even 1° for star-vs-eclipsed-Moon gap (§B7); ocular error 1°±1° (fn 97 here) for Hipparchos’ mean equinox, with 2° scatter (fn 12); 1° for Earth-circumference-measure precision (fn 108); 10° for lunar eclipse-prediction (fn 97 here); 1° for lunar eclipse observation (Rawlins 1985G pp.258&265); 1°/century for mean of motion of Mars (and maybe Venus); 1° for all three adopted months (synodic, anomalistic, eclipse), each correct to better than one part in a million. Historians-of-science like Shcheglov show no sign of awareness of any of these Greek achievements.

obvious from, for instance, Britton 1967 p.29. More generally, §83’s key Obvious Question C jokes like fn 8’s Swedlow-Gingerich-Scientific-American’s Ptolemy-exculpation-theory.

On 1982/7/17, ever-Ptolemy-worshipping JHA, unable to argue facts or math, nonetheless belatedly excised Ptolemy’s sensational 50-to-1 indoor-vs-outdoor ratio (§I8) from a projected Rawlins paper (fn 74 here; precensored text at Rawlins 1999[E], along with none-observer-outdoor observer Hipparchos’ parallel ratio of just 2-to-1 or 3-to-1. (Even that tiny ratio reflects just that his tables were founded upon his own slightly imperfect solar data. His UH tables’ eclipse-prediction accuracy was ordmag 10°: Rawlins 1991H eq.32.) The 7° mean error of Hipparchean equinoxes is mostly not due to eyeball inaccuracy: when one removes the effects of his presumed solar parallax and (like fn 70 above) the errors from refraction in the Sun’s zenith distance, and his instrument’s setting-tilt from polestar-refraction, there’s only 1° (±1°) unaccounted-for: see Rawlins 2018U §B4. Mars (and Venus) mean motion accuracy c.1°/century: Rawlins 2002V fn 26. Contrast to 1° here, and to the umpteenth fruitless metrological analysis of Eratosthenes’ Earth-circumference, Shcheglov 2016, www.dio.org/shc.pdf, which massively contends that high-accuracy Greek longitudes are mythic, his entire assault upfront-promoted by History of science Society (and post-protected by HsS stadium-nonneculation), ultimately undone by his crudely confusing a solar eclipse with lunar and falsely putting Spain into the eastern hemisphere (and China’s Xi’an & Luoyang into the western). Yet another history-of-science journal’s all-too-common Pb-paper duff-science: details of these latest Isis disasters can be found here at §(E), DIO’s Letter-to-Isis’ hiding-since-receipt Editor H.F.Cohen.

111 At the 1984 Greenwich Centenary, DR presented evidence countering Neugebauer’s denial (above: fn 90, vs fn 13) of the existence of organized science in antiquity, by 3/4-unstretching the longitude of the naively 4/3-stretched map of Ptolemy’s 160 AD GD, the Geographical Directory (often called just Geography or Geography), finding that Greek mean longitude error was well under 1°, thus indicating that ancient scientists had cooperated in comparing (as recommended by Hipparchos: Shcheglov 2016 n.7) local times of lunar eclipses at even far-distant sites (fn 105). E.g., the unstretched 42° longitude-difference between Carthage and Persepolis is correct to ordmag 1%. NB: The distorted remains of accurate ancient geography in Ptolemy’s GD were ruined in two widely separated stages, and in two very different ways (but sharing an asterologist-source in each case): [1] Latitudes were semi-randomly wrecked by Hipparchos (contra Rawlins 2009S fn 18); his discrete tabulation of them (GD 1.4.2) for professional reasons. (See sources here at fn 13 for details; Hipparchos was publishing tables [Tihon 2010’s valued direct revelation] which served 3 astrological traditions simultaneously, sidereal (or anomalistic), Kallippic, & Metonic, looking as professionally gain-oriented as today’s astrology, whose practitioners yet cater to 2 of the 3.) [2] Longitudes were systematically ruined by isolated asterologist Ptolemy’s ignorant stretch of correct eclipse-based longitudes by 7/5 or 4/3 (§15 [§F&M]).


113 For decades, historians-of-science argued (e.g., fn 18) against Hipparchos’ possession of spherical trigonometry, a position now indefensibly obsolete: for a pioneering all-inclusive compendium of four plain evidences (& fn 103 here) that Hipparchos had full spherical trigonometry, see www.dioi.org/cot.htm#tvcvc.

114 Rawlins long insisted that the Almajest Mars mean motion was based on ratio 152145°/329621°. Inspired by Duke’s skepticism, Jones in 2002 discovered it was based on a different cyclic ratio that Ptolemy had carelessly neglected, residing, ironically, in the Almajest itself. In the same article, Rawlins gave a similar explanation of Almajest Jupiter mean motion, equally false historically, reflecting even less-excusable overconfidence. The correct cyclic Jupiter solution was simultaneously realized by Jones and Duke. Rawlins faxed double-congratulations to Jones the hour he heard of the finds, announcing them in 2003 on DIO 11.2’s cover, establishing for years a $1000 prize for each overturning of himself (www.dioi.org/prri.htm), thus retroactively sending $2000 to Jones (no reply).

115 Generalizing from the bases of mean motions of the planets, the Moon, & (partially) the Sun, DIO created a General Theory of Ancients’ Cyclicities, proposing it was preferred ancient method to found mean celestial motions upon empirical integral-return ratios.

116 It’s long been assumed that Hipparchos rounded the time of dawn or evening to the 1/4-day, even near solstices. But, in 2015, DIO showed that Titon’s papyrus is consistent with Hipparchos using exact time for each when gauging yearlength, thus revealing (fn 66) the origin of his hitherto-unexplained 365°1/4 – 1°7/309, which Titon was 1° above to reveal.

117 In 2002 K.Pickering discovered that original locations of dozens of erroneously placed stars in the Almajest 7.5-8.1 catalogue can be reconstructed (occasionally via spherical trigonometry), but it was repeatedly found that repairs could only work with coordinates from Hipparchos’ era, not Ptolemy’s; sixteen years later, Pickering has yet to produce a collection of such reconstructions based upon the opposite theory, leaving the independent implication that Hipparchos’ catalogue was observed by Hipparchos, later plagiarized by Ptolemy.


Pickering 2002C.
In 1982, Rawlins sought the epochs $E$, as well as the errors $x$ in the observers’ assumed latitudes $L$, and their standard deviations, for all 4 known ancient stellar-declination observers — Timocharis, Aristyllos, Hipparchos, Ptolemy’s anonymous observer — through bivariate least-squares testing upon these observers’ star-declination data.\textsuperscript{100} In 1994, ex-

\textsuperscript{100} Rawlins 1994L §F3-F8, where nulls show Timocharis (known observations $c.$ 300-271), earliest of Alexandria’s 3 observers of extant star declinations by surveying instrument, alone knew his exact $L$. Later studies get virtually the same $E$ for each observer. Mayama 1984 finds thusly, but instead of $DIO$’s bivariate least-squares (Rawlins 1994L Table 3 results), he independently finds observers’ epochs $E$ and latitude-errors $x$ by double-monovariate, noncalculus trial-and-error, and graphs — gauging $E$’s standard-deviation by eyeballing, and $x$’s by confusing it with that for a single datum. More recently, in the mathematically-challenged Journal of Astronomical History & Heritage [JAHH], Brandt et al 2014B, www.dio.org/brj0.pdf, says most of $DIO$’s geographical latitudes ‘of Earth not come to our values’. But their $L$ are merely assumed, so $DIO$’s JAHH-requested 2014/8/26 referee report, www.dio.org/jau8p.pdf, asked that the paper notice $DIO$’s entirely original 1994 nulls-method of non-assumptively determining $L$ (Rawlins 1994L loc cit), a discovery neither available nor even cited anywhere else — a quarter-century later. A few referee-recommended corrections were fortunately applied by $DIO$ e.g., $DIO$’s standard-deviation (compare www.dio.org/brj0.pdf, p. 5 to just above). The request for showing how $L$ finally could be found (not guessed) was, among others, not met by $JAHH$. See 14 §C16 below for the weird details. Also and more importantly unmet was the $DIO$ referee’s urging the Brandt et al 2014B paper to take note that Ptolemy arithmetically reduced (Almagest 5.12-13) his transit “observations” to declinations using a seriously false Alexandria latitude $L$, from Vitruvius 9.7.1 (plagiarism unmentioned at Schwabro 2010 p.151), $L = 30°58'$ (arctan 3.5; above, in fn 25), erroneous by $-14'$, which obviously is much-too-large for a regular outdoor observer, and also is in $17°$ conflict with latitude $L = 31°15'$ which is indicated (by nulls) to be the virtually-correct value that was adopted by the stars’ actual observer. Brandt et al 2014B’s standard deviations $\sigma$ were allegedly calculated bivariately; but, actually, after each $E$’s was found monovariately, $L$’s “accuracy” was found by averaging the remaining residuals, original but invalid procedure, making $L$’s uncertainty too small by an ordmag, as referee-specified. NB: Had Brandt et al 2014B’s $L$ $\sigma$ first, then finding $E$’s $\sigma$ first, and reverse, finding age $E$’s $\sigma$ first, then reverse to get the other variable’s ($E$’s) “accuracy” similarly, the result would have been informationless zero! (See 14 §C11.) There are further oddities. Ibid eq.1 sets $O-C$ equal to $C$. The paper’s $O-C$ graphs are rendered C-O. Two strange $JAHH$ attempts to undercut skepticism by splitting $DIO$’s 18 stars differently from R.Newton (and, by-the-way: Ptolemy and Pannekoek and DR — see C14) — intentionally ensuring an unobstructed southern horizon, to see as far south celestially as possible from the island. (Unobstructed southern sea-horizon was also chosen by Eudoxus at Knidos, Pytheas at Marseilles’ Cape Croisette, Tycho at Hvin Island.)

I19 The main Hipparchos observatory’s deduced\textsuperscript{101} latitude, $36°08' ± 1'$, was just-currently independently by 2016 realization of the mutually confirmatory reality of his computing reliability (§D3) together with his trigonometry tables’ accuracy ($\sigma$14) which jointly bring $1'$ precision to a 1997 exploratory finding\textsuperscript{102} of brackets for observatory-latitude, $36°00'22" < L < 36°09'09"$. This rules out frequently assumed $L = 36°4$ (Rodos City) and barely conflicts with commonly rounded $36°$, while consistent with above $36°08'$, indicating Hipparchos’ permanently fixed instruments were near Rhodos Island’s Lindos ($36°05'$).

I20 Latitude $L$ of the perhaps-portable (inferior) transit circle of Hipparchos’ most southern observation-spot has been reconstructed\textsuperscript{103} by:

1. Thurston-inspired spherical-trigonometric transformation of the Almagest star catalog’s southern ecliptical data, restoring originally-observed equatorial coordinates, then
2. testing the declination data thus recovered, to learn which $L$ produces (in implicit zenith-distances) the dramatic, R.Newton’s excess of 00'\textsuperscript{104} expected for raw ancient instrumental observations. That ($L = 35°50'$) suggested the southern stars’ observer worked on Rhodos Island’s south tip, Cape Prassonesi (altitude over 200m), $L = 35°53'$ — intentionally ensuring an unobstructed southern horizon, to see as far south celestially as possible from the island. (Unobstructed southern sea-horizon was also chosen by Eudoxus at Knidos, Pytheas at Marseilles’ Cape Croisette, Tycho at Hvin Island.)

I21 Using Alexandria or Cape Verde Islands as 0° longitude, did far-apart scientists organize to compare each of their Moon eclipse data, thus fixing longitudes of sites to such exilings is to intimidate pushback-scholars into silence. And, in current grant-hunger-corrupted academia, it nearly always works. Nearly. None of these three purportedly-refereed journals (vs above & fn 48&97) encourages non-closeted investigation of $DIO$ accuracy or of their own behavior. None of Isis’ bunkered editors’ inputs on what ultimately became www.dio.org/gjdo.doc, nor Isis’ 2017 March “referee report” ever mentioned the paper’s history or science or misc-math or factual errors. Not what really matters anymore in history-of-science. (After demanding the paper’s muting, Cohen finally sent an earlier unedited version to his referee, ensuring the negative verdict he sought.)

\textsuperscript{101} Table 2 above.

\textsuperscript{102} Brandt et al 2014B.

\textsuperscript{103} Rawlins 1994L eq.1.

\textsuperscript{104} Excess of 00' endings (crucial fractional-endings test) discovered by R.Newton 1977 p.247. Cape Croisette: Rawlins 2009P §B.

\begin{table}[h]
\centering
\caption{Ancient Observers’ Epochs $E$, Adopted and Actual Geographical Latitudes $L$}
\begin{tabular}{|c|c|c|c|}
\hline
\textbf{Obsvr} & \textbf{$E \pm \sigma_E$} & \textbf{Adopt $L$} & \textbf{Its Error $x$} & \textbf{Actual $L \pm \sigma_L$} \tabularnewline
\hline
Timoch & $-294±11'$ & $31°12'$ & $-1'\pm82'2'$ & $31°13'8\pm27'$ & $\pm9'0$ & $\pm8'8$ \tabularnewline
Aristyll & $-258±10'$ & $1°15'$ & $+1'\pm72'7'$ & $31°14'0\pm27'$ & $\pm6'1$ & $\pm4'2$ \tabularnewline
Hipp & $-131\pm05'$ & $36°08'$ & $+0'\pm21'2'$ & $36°07'8\pm1'2'$ & $\pm5'2$ & $\pm5'0$ \tabularnewline
Anon & $+159\pm09'$ & $31°15'$ & $+4'\pm12'0$ & $31°10'6\pm22'0$ & $\pm6'0$ & $\pm5'6$ \tabularnewline
\hline
\end{tabular}
\end{table}
In 1982, it was shown that Eratosthenes’ original Earth-circumference C was neither of the long-accepted (variously rounded) stade-values, 25000 or 252000, but instead was 256000. In 2008, 2613 later, all 3 were checked against Eusebius’ long-neglected Eratosthenian Earth-radius r = 40800 stades, and 256000 was the only one of the 3 that fit r = v^3/2h, becomes just r = v^3, thus Earth-radius r in stades can be found by just squaring the flame’s coastal oversea visibility-distance v in stades. At first the trick seems suspiciously overseasy & dimensionally impossible. But it works. Note that squaring 202 stades, and rounding conventionally, yields Eusebius’ r = 40800 stades (§II2): a 3-to-1-unlikely chance-hit (Rawlins 2008Q §11; Rawlins 2018V).

Taking the stade’s length to be the generally-accepted value, 185 meters, Sostratos-Eratosthenes’ r = 40800 stades is 19% or about 6/5 too high, while Poseidonios’ C = 180000 stades, the other anciently standard Earth-size, is exactly 5/6 too low. It is an Occam-DIO dream-come-true to perceive that since horizontal light rays’ curvature = 1/6 Earth’s, the atmospheric refraction would cause observed errors in C of 6/5 and 5/6, respectively, for two simple, clever, low-physical-labor never-leave-home methods 108 of measuring the Earth: the Pharos-flame method (6/5) virtually attested by Pliny 2.65.164; and the also-physically-easy (& obvious!) double-sunset method (5/6). So DIO’s refraction theory at once satisfies both Sostratos&Eratosthenes&Hipparchos’ C (6/5 high), as well as

108 Rawlins 1985G p.265, taking an idea due to (ibid n.22) Gosselin 1790, suggests an ancient, adjusting for the 700 stades/1000 stades 15 switcher, stretched longitudes by 7/5, mis-assuming they were based on land-surveys (1 §). Or by 4/3 via Poseidonios’ C = 240000 stades—180000 stades. Proposing Greeks organized to compare eclipse observations (fn 13): Rawlins loc cit, vs fn 90 above & conchabers, with the Verde Hesperides, westernmost known land, chosen as Marinos’ 15 longitude (www.dioi.org/150.pdf, §1A5), to kill longitude sign-muffs like those (fn 97) cursing Shcheglov 2016, [Speculation 2018/7/15. Marinos = pseudonymy, like “Ptolemy”? Or map-title from maritime Tyre?] C = 256000 stades 14 induced from a Nile map’s latitude intervals: Rawlins 1982n pp.212, 214, 216-217; Rawlins 1985G §225; Thurston 2002S p.66. For which C fits Eusebius’ r = 40800 stades: just multiply r by 2: 5. Rawlins 2008Q eqs.8-11&18, esp. eq.11’s solar distance = 100.1 AU. Fn 10’s 1AU is overexact (fn 42), even while squaring 252000 less well than 100 AU fits 256000 fits.


See ibid §A [a] for the Pharos-flame method and Pliny’s semi-attention of it. Double-sunset method: Rawlins 1979 or Scientific American 1979 May. Interval between times of sunsets seen from Pharos’ topobottom exceeded a time-minute, unmissibly-enormous alert and gauge of C’s size. (Elementary illustration-by-extremes that different results ensue for flame vs sunsets: Rawlins 1979 1A5.) To be writing direct atmospheric refraction on stade-based, widely cited modern expls here, the foregoing utterly original & successful atmospheric-refraction theory — tri-nearly solving the INTERMINABLY-contended ancient Earthsize mystery — cannot legitimately be ignored. But it is: fn 111 below. Unbelievably worse: fn 109! One recalls not only JHAD shunning of Diller (fn 25), but the case of L. Boltzmann’s kinetic theory of gases, which E.Mach & others spurred because (though theory neatly fit evidence) no one had ever seen a molecule. Did this trigger Boltzmann’s 1906 suicide (just ere vindication by Wilson-cloudchamber)? We don’t know. What we know is: certain pols cited hereabouts wouldn’t care. Past perhaps praying for history to repeat. Ever so vainly.
Physics, *Scientific American*, Archive for History of Exact Sciences, even a well-known physics-textbook, & currently is the cover article of the 2018 Aug *Griffith Observer*.

**Question #1:** Is there yet the slightest visible evidence that any — ANY — one of our 

unanimously deaf&dumb shunners even understand the physics here?

**Question #2:** Do archonial cynosurae realize that the 6/5 factor has been standard among 

navigators&astronomers for over 100? (All scientific navigation manuals have horizon-dip 

shrink by $\sqrt{5}/6$ [vs straight-line geometry] and horizon-distance expanded by $\sqrt{6}/5$ [vs 

straight-line geometry], both due to atmospheric refraction. See, e.g., the Bowditch.)

**Question #3:** Would it matter?

Hypothesis-discoverer Rawlins’ own 1996 case\(^{110}\) for re-evaluation (emphases in original) 

follows. DIO’s new PHYSICAL — not standard kneejerk-geodetic — theory 

(ascribing both ancient [Earth-C] values’ error to [atmospheric] refraction) 

simultaneously solves . . . both the (very discrepant) Eratosthenes & Posei­donios’ 

donors values . . . (through a single value for the stade: the same . . . 185m value . . . found even in most dictionaries.) 

No other simple, coherent theory does so. [Classic Eratosthenian stade-scruncher J.Dutka]\(^{111}\) . . . claims that the reason for the 180,000 [stade] value’s lowness is not known. He might’ve 

instead noted: [i] a coherent explanation exists for both figures, but [ii] he 

prefers the theory that explains only one of the figures — [Eratosthenes’].

Can there ever be rational discussion here when the only theory that fits all 3 data (both C, 

as well as the standard 185m stade is not even understood by those who keep prominently 

churning out forced metrological retreats (as recently as late 2016!) — in 97 here), none 

of which can fit more than one of the 3 desiderata; and even that single fit is often several 

times worse than 1%. Hint to metropologists: your century of stade-tweaking has been 

obsolete — simply no longer needed to explain disparate C. Note 3 hip-ironies here 

Eratosthenes’ Earth-Circumference experiment, often seen as the most enduring 

astronomical legend of all, and the subject of centuries of failed metrological speculations.

\(^{110}\) Quote from Rawlins 1996C fn 47. Those who have spurned the 185-meter stade include F.Hultsch, 
runty “Eratosthenian” stade is obvious to most specialists, e.g., P.Gosselin, E.Bunbury, D.Dicks, 
O.Neugebauer, J.Berggren, A.Jones (more at idem). (Who creditably did not jump indis­

criminately at a poor solution, but waited for a valid one to come along. So far so good. But 

now that DIO’s airbend theory is here, no historian-of-science is claiming the math doesn’t work. Or that 

anything works better. Has the-catatonia got the JHAD-tongue?)

(111) Dutka 1993 p.64 cites Rawlins 1982N — whose App.A explicitly links 6/5 to lighthouse and 5/6 to 
sunsets — without ([126] citing the paper’s atmospheric refraction theory that explains these felicitous 
fits to the 2 respective ancient C-values at issue, & with no sign whatever of understanding the paper’s 
physics. Strabo’s arcs (where Earth-curve is apt to a meridian circle of circumference 39870000 m): 
5000 stades Alexandria-Aswan & Aswan-Meroë, each good to ordmage 1/4 for 700 stades/degree: 7°/8 + 
7°/8 = 14°/14. (Rawlins 2009S C notes Philo’s solar work at Meroë, presumably for an imperial 

survey.) Testimony for early-Ptolemaic meridians in 60th: Strabo 2.5.7 (Eratosthenes); also Geminos, 
etc.: Neugebauer 1975 pp.590 (n.2), 733, & 1364 (Fig.43). Is a Ptolemy I survey’s memory embedded in 
Kleomedes 1.10’s famous legend? (Rawlins 2006Q §A4[a]) that early-Ptolemaic survey-based Earth-circumference 
determination was just legit. This can be seen as showing DR’s poor judgement. Or desire to learn. Or both.)

\(^{112}\) DIO 1984H fn 64 cites Rawlins’ 1982N — whose App.A explicitly links 6/5 to lighthouse and 5/6 to 
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determination was just legit. This can be seen as showing DR’s poor judgement. Or desire to learn. Or both.)
Sourcing Ptolemy’s final lunisolar ratio, occurred 2 decades ago (all 10! digits exactly elicited) by test-exploring Greek awareness of the 800° sidereal eclipse-cycle (1/5 of 800° cycle attested: Geminos 8.40-41): solution, awareness, & nest not suspected erst Rawlins 1996C eq.31. (Sidereal year accuracy: ibid Fn 110.) Royal Muftia Cavilliers have produced no math error or alternate solution since. Predictable result (see Rawlins 1996C’s title and boxed 2013 statement atop its p.2): permanent silence.

More muteness greeted DIO’s 2002-2003 discovery that all 3 previously unsolved, increasingly adopted mean motions of the Moon (1. System A; 2. draconitic; 3. Ptolemy’s last lunar equation) were exactly consistent with discovery by ancient scientists who merely divided an eclipse cycle ratio by whatever integer or half-integer was common to both the ratio’s terms. Thus the way Ptolemy at Almajest 4.2 & 9.9 explains determining synodic, anomalistic, & draconitic. Notably, no matter where, over a 400° span (3rd century BC to 2nd century AD), the pairs’ latter eclipses are located in time, all the prior ratio-solving eclipses turn out to be from the very same century, the thirteenth BC (§136). One might suppose the center’s largely old-guard pan-Babylonians, would welcome the prospect that such remarkable Greek triple-accuracy could have a fundamental & irreplaceable debt to Babylon and would delight in the potential new views opened by these astonishingly exact matches. Instead, the entire history-of-ancient-astronomy shunniness, frustrated by inability (like §133) to find math error or alternate eclipses to show non-unicineness, has been forced to just datalessly scoff (chief sneerleaders: A.Jones and D.Duke) at the very idea of such remote eclipse records as ridiculous a priori. But perhaps neither snickerer has heard about non-cult §136 scholarship by Johannes Koh who had already (earlier) estimated Babylonian observations’ masconce as about 1/350? Surprise realized that Hipparchos’ famous 600° lunisolar tables effectively went back just that far only actualized in 1517.

So we should gauge the proposed eclipse-ratio method by comparing to it what may be verrily loosely referred to as “the competition” (e.g., fn 119). Facts: No other method is attested. (Twice: idem.) No other method is simple & immediately-direct-to-the-result. No other method could ensure such high accuracy, 1-part-in-10^8, 3 times out of 3, eliminating false nearby period-ratios (§137). No other method than eclipse-period integral ratios so naturally accounts for why all said motions were expressed as integral ratios. No other method explains the 4-digit size of each ratio’s 2 components: as in Almajest 4.2 & 6.9.

No other credible (fn 119) method, attested (or unattested) has math-reproduced ANY of the numbers sought, while DIO’s proposal has done so for ALL 24 digits precisely — that is, all six 4-digit components — on-the-nose in each case: see www.dioi.org/thr.htm#ctqq, (PionHyp 1.1.6 (Heiberg 1907 pp.78-79 or Neugebauer 1975 p.901 eq.3); 105416 = 8523°. Solved: Rawlins 1996C eqs.20-31. Thanks to K.Moengaard for a perceptive correction.

The admirable exception to Hist.sci ignoring ancient monthlength accuracy: Pedersen 1974 pp.164&424. But he does not realize how much accuracy was achieved, nor does he go on to challenge the anti-empirical orthodoxy we saw at fn 8.

Moengaard 1992 p.474. Initial Muftia tactic vs R.Newton & DIO was non-citation. But Isis Editor Margaret Rossiter’s publishing DIO-respecting Thornton 2002S defied the 30th shun, inspiring (what else from pathologica unregenerates?) DIOshun: [a] Thornton’s swift ever-exile from JHA (www.dioi.org/pm3.htm); [b] DIO-citations’ end in AAS-HAD’s Newsletter & [c] Isis’ Cumulative Bibliography; [d] during Thornton 2002S’s refereeing (2000), the usual indiscriminate (fn 66) unreferenced anti-bodies prepared for launch: Schaefer 2001 (Pb), Schaefer 2002, Jones 2002E (2nd to Pb), Duke 2005T, Duke 2005W (Pb), Jones 2010B (2nd to Pb), as pols outdid each other (to squush #1 blackballei no matter how: §3B-G), all now on JHA’s certified-Premier (fn 42) board. Re JHA’s prior villain, we quote from fn 28: “Rewards handed out to those who attacked the R.Newton satan include JHA’s boardship (R.Newton 1991 fn 2) & a MacArthur for miss-man [fn 96 here] Sverdlov. (It’s hard to find good help anymore.) . . . maid-men Evans & Schaefer were elevated at JHA not long after their massive bungled 1996&2001-2002 attacks on Rawlins. (The unsubtlly here may actually be deliberate.) Selecting boardmembers [thuggily] will damage mean-IQ atop JHA for decades to come.”

For this recent shock, see www.dioi.org/thr.htm#brvk. Re Hipparchos’ 600° tables, see Pliny 2.5.3.

To emphasize the precision and the breadth of this achievement, we display the three anciently-adopted lunar speeds DIO has mathematically traced to hugely-separated eclipse-pairs, all starting around the 13th century BC (details www.dioi.org/thr.htm#ctqq):

- 1291/11/23 vs. 2621/16 & -1273/12/05 vs. -2621/16 → 6427° = 6695° (System A),
- 1244/11/13 vs. 1401/1/27 → 5458° = 5923° (Hipparchos),
- 1200/07/11 vs. 1189/06/12 vs. 136/3/06 → 3277° = 3512° (PlanHyp).


Again: mere integral division is DIO’s twice-ATTESSED eclipse-cycle “method” (too fancy a term?) of exactly reproducing all 24 digits. In the 1/2 decades since these super-simple DIO solutions’ 2002-2003 debut: no historian-of-science has publicly engaged a single one’s science. Nothing beyond a rigid clique’s continued tradition influence on its own insatiable theory that UNATTESTED labored Babylonian analysis of poor lunar horizon (fn 18) data couldamusta generated such accuracy — if only enough data were averaged! (This bizarre notion came inevitably out of the Neugebauer-Babylonianist cult, ever-clinging baselessly to its sacred tenet that Babylon gave rise to high Greek astronomy.) Naturally, no numbers are provided to show how such a fantastic reconstruction could: produce HYPER-accurate results, or [b] find the draconitic month at all, [c] distinguish
among almost-as-accurate proximate ratios (www.dioi.org/thr.htm#epcc), or [d] explain why each solution emerges as a ratio, a glaring feature of ALL pre-Ptolemy adopted lunar motions, which by contrast to orthodoxy is accounted-for perfectly inevitably by the eclipse-period-ratio solution. Jones’ blindered private rejection [24] (by subsequently-undercut [2] reasoning) of the DIO draconitic solution, flies all of the overkill-numerous, solid, unambiguous evidences consistent with said theory, particularly its PRECISE match to Hipparchos’ draconitic 5458: = 5923: ratio (Almagest 4.2) by pairing an early apogee eclipse, −1244/11/13, with his Rhodos-observed −140/127 eclipse, the very same perigee eclipse which he uniquely had also previously (Almagest 6.9) paired with a less early apogee eclipse (−719/3/8) for exactly the same draconitic purpose, with inferior result—inevitably, due to shorter timeframe. Comments: In all history, no astronomer before Hipparchos ever used an apogee-perigee eclipse-pair. Scoffings at the theory’s outrageousness-vs-orthodox-preconception inadvertently compliment it by reflecting its potential advance’s enormity. (Excerpt from DIO 2018)

J How to Hide from Reckoning: Get Thee to a Shunney

The foregoing suggests shortcomings in the modern ancient astronomy subfield re: [a] Scrupulous & neutral refereeing. [b] Turfless generosity & citational integrity. [c] Open-minded curiosity and tolerance (Hoskin, Evans, Jones, and Toomer have felt contact with Rawlins for years, e.g., Thurston 1998D fn 2) without a professional-survival priority — nay, necessity — of treating archaeologists with an attitude of nondissent, even supplication, to allay (non-imaginary) fear of being unpublished or outright blackballed, as if such etiquette-issues outrank ([§15] academic skills & integrity. (And o-yes accurate history.) [d] Scientific skills (or regular consultation with able scientists), & especially the purest scientists’ attitude of humble subservience to evidence (acquired by careers of frequent empirical contradiction). [e] Celerity of incorporation of knowledge-advancements (vs fn 20 here: 84 years?!) that will minimize historians-of-science’s grasp of the empiricism & brilliance of Hellenistic science. [f] Essential, genuine neutrality and curiosity (hardly compatible with a cult’s insistence on aggressively protecting sacred viewpoints for decades on end), enhanced by willingness to hypothesize-explore — ever subject to evidence-congruity (e.g., fn 16&83 vs fn 20&25&40). [g] Philosophy-of-science&common-sense Occamite theory of fabrication explains both and to the Almagest’s 1st precision. Therefore, in each case (lunar or solar), which approach would Occam prefer?

124 Half-dozen evidences for Hipparchos as author of 5458: = 5923: Rawlins 2002H §C.

125 Neugebauerians long taught that 6 cuneiform-tablets’ lunar calculations for c. −200 proved chronologically Hipparchos (=−130) took his draconitic equation from Babylon, until Rawlins 2002H §D pointed out: [a] the only 3 early tablets using his equation were the only 3 not dated on the clay, and [b] there’s a 7th tablet that is clay-dated, using his equation, but the date is after Hipparchos. As willfully as in fn 28, Jones ignores (private communications) not only this & fn 123’s flock of coherent evidences, but also rejects an unexpected key opening spinoff-benefit: recommending responsively increased caution when time-placing non-clay-dated astronomical cuneiform tablets: *ibid* §D1.

weighing of competing theories by such criteria as simplicity ([§4 above], probability’s relation to confirmation ([§2 [N15], minimal hypotheses ([§D & fn 122], fruitfulness ([§C3][b], E, & F), predictivity ([§F & G]. Instead of by herd-grantmanship.

J2 What simple, Occamly-coherent theory explains the serpentine communal behavior detailed below — targeted non-citation, desperately indiscriminate “alternate” solutions to debase solid achievement, dishonest smearing, data fudgery and even destruction? Answer: shunning [125] (aimed at anyone upsetting archaeologists’ tenets or pretensions) — the single spare hypothesis that ties together all of the foregoing superficially mysterious, deeply inexcusable offenses against ethical scholarship. No use denying it: jihad-shunning of Diller, Newton, Rawlins, and DIO is common knowledge throughout the JHAD circle. (Can’t blame on Rawlins’ acknowledged shortcomings, for sedate gentlemen Diller, Newton, & Thurston [www.dioi.org/thr.htm#cpcc] were shunned from & fn 2013, 1986, & 2003, resp. most of ten years before Rawlins barged into The Ptolemy Controversy in 1976. Even highly expert Britton felt he’d been somewhat exiled, as he imparted to Duke, for honestly owning that Ptolemy’s solar errors were not innocent: fn 22.) But, given the above consistently weird incidents, one needs no inside dope to smell heresy-banishment, along with the temptation that attacking the most archon-resented heretics (no matter how shoddily: fn 66) will bring advancement to any careerist willing to stoop that low. What scholar ever lost immediate status by adding to an establishment cult’s sacred crank literature? Concluding: [1] Outside the clique here examined, can historians-of-science recall any cases like the above-cataloged rear-guard mass-vandalism of data and thus of potential historical progress constructable thereon? But, then, have there previously been unanswerability-panics of the magnitude that R. Newton & DIO represented? [2] For the ancient astronomy field, has Curtis Wilson’s cleansing hope (fn 59) been snuffed? [3] Greek astronomy will ever rank uniquely as man’s 1st foray in precise predictive science. Its loopy place in human history need not be desecrated by archons’ mundane limitations.
References

Dennis Duke 2005T. Centaurus 47.163.
Gerd Graßhoff 1990. History of Ptolemy’s Star Catalogue, NYC.
Peter Huber 2000. Centaurus 42.223.

stand indefinitely-uncorrected his own miscalculated-backfired evidence, not retracting the slander of Greek science it was adduced for, in ever-orthodox support of the 2 prime inter-related field-dominant clique-myths regarding Greek astronomy that we’ve been discussing hereabouts: [a] Ptolemy’s honesty (fn 9); [b] Greek data-inexperience’s unattested-but-alleged consistency with allegedly-normal science (fn 8; also Evans 1998 p.209) that allegedly-retained only theory-fitting data: i.e., forcing all Greek astronomy to fit a faker-astrologer; then, pre-post-erosibly, with Ptolemaic evidential circularity, using that very model to prove his normalcy, a truth-inversion warp that’s ruled the field for most of a century.