**HALLEY’S COMET - THE GREAT DECEIVER**

\_”The return of Halley's comet suddenly made comets the headliners of astronomy, and for several decades it seemed that the greatest feat any astronomer could achieve was to discover comets.”\_ [“Halley’s comet” – the Free library]( <https://www.thefreelibrary.com/Halley%27s+comet.-a017269148>)

It is ironic that Halley’s comet (which, by all accounts, provided “vital and definitive proof of Newton’s law of universal gravitation”) can now provide incontrovertible evidence in support of the TYCHOS model.

![](<https://www.history.com/.image/c_limit%2Ccs_srgb%2Cq_auto:good%2Cw_686/MTU3ODc4NjA0MDU2ODMxNzEx/image-placeholder-title.webp>)

Everyone has heard about Halley’s comet - the most famous comet in our skies (and the most intensely studied of them all). Fewer people will be aware that comet Halley is - still today - among the most controversial subjects of astronomy, since its orbital period is (supposedly) wildly irregular or - as astronomers like to call it - “chaotic”. Still fewer people will know that (according to academia), comet Halley provided the “ultimate proof” of Sir Isaac Newton’s theories. Indeed, as Halley's comet returned in 1758 (as predicted by Newton’s mentor, Edmond Halley ), this was hailed as the greatest triumph of Newton's gravitational theory:  
  
\*\*\_“Its discovery was hailed as a triumph of scientific reasoning and Newtonian physics. By its appearance at this time, the truth of the Newtonian Theory of the Solar System is demonstrated to the conviction of the whole world, and the credit of the astronomers is fully established and raised far above all the wit and sneers of ignorant men.”\_\*\* [A Brief History of Halley’s comet” - at History.com](<https://www.history.com/news/a-brief-history-of-halleys-comet-sightings>)

In hindsight (as will be thoroughly demonstrated in this chapter), those \_‘sneers of ignorant men’\_ were quite legitimate and well-founded: the proposed behavior (and periodicity) of Halley’s comet, as proposed by Newton and Halley, was a hodgepodge of mere assumptions and arcane numerical integrations . Their cometary theory (which still ‘stands’ today) is riddled with absurdities, the most glaring of them being that comet Halley’s periodicity would somehow fluctuate by as many as 6 years - unlike ALL other celestial bodies in our Solar System. As already mentioned, comet Halley’s orbital motion is believed to be “chaotic”: according to the official tables, the intervals between the returns of comet Halley can be as short as 73 years - or as long as 79 years! Oddly enough, these upper / lower limits are hardly ever mentioned in astronomy textbooks (most of which report a “75/76-year” figure for the comet’s periodicity).

Here is what ESA (the European Space Agency) has to say today about comets:

\_”TESTING GRAVITY: HOW COMETS HELPED TO PROVE NEWTON RIGHT. In the seventeenth century, science was thriving across Europe. The concept of a heliocentric Solar System was slowly spreading, bringing with it a reignited curiosity for astronomy and a lessened fear of previously mysterious celestial objects, such as comets. Cometary science was to take many great steps forward in the coming centuries - but first, comets had a vital part to play in developing one of the most fundamental theories in all of physics: Newton's law of universal gravitation.” [“TESTING GRAVITY: HOW COMETS HELPED TO PROVE NEWTON RIGHT” - on the ESA website]( <https://sci.esa.int/web/rosetta/-/54199-testing-gravity-how-comets-helped-to-prove-newton-right>)

Such boastful and celebratory statements are to be found all over the literature. Yet, as we shall see, the titanic efforts deployed by over the years in order to try and “justify” comet Halley’s (supposed) massive irregularity stand out as one of astronomy’s most ruinous comedy of errors. It was followed by a flow of imaginative ad hoc theories dreamed up by our world’s scientific community - in what reads like a cheap yet exhilarating science fiction novel. Among the funniest theses is that Halley’s comet would somehow be drastically slowed down and / or accelerated (by “perturbating gravitational forces”) as it transits in the vicinity of Jupiter, Saturn or Venus. Indeed, we are seriously asked to believe that such random forces would explain why the orbital period of Halley’s comet would fluctuate by up to +/-6 years! Over time, a host of so-called “non-gravitational effects” were then gradually added on top of those ghostly “gravitational perturbations” - since the Newtonian calculations soon turned out to be inadequate for predicting the comet’s return with sufficient precision…

In astronomy almanachs, one may find (almost unfailingly) observational reports of comets that “just happened” to pass close to the Earth one or two years prior to / or after any given “official” transit of comet Halley. Now, since the comet is believed to swish through our Solar System at great speed and make a U-turn around the Sun, it is thought that it can only have been viewed once within a given year (that is, in the pre-telescope days) as it traversed our Solar System; therefore, all cometary sightings (reported one or two years before or after a transit of Halley’s) are deemed to have been nothing but “coincidental” transits of entirely different comets. Moreover - and most importantly - whenever any of those “coincidental comets” were observed to move prograde (i.e. in the \_same\_ direction as our planets) astronomers would quickly dismiss them as possible sightings of comet Halley (since the latter is believed to proceed clockwise around a cigar-shaped retrograde orbit - in the \_opposite\_ direction of our planets).

\*\*THE SUPPOSED "CIGAR-SHAPED" ORBIT OF HALLEY'S COMET:\*\*

![](http://septclues.com/TYCHOS%20SLIDESHOW/HALLEY\_supposed\_ELLIPTICAL\_PATH\_01.jpg)

None of the aforementioned “coincidental comets” (many of which will be illustrated below) have thus been officially identified as Halley’s comet. Some of them have been given their own names (e.g. “The Great Comet of 1680”, “Boguslawski’s comet”, “The Great January Comet of 1910”, etc. ) - and most of them have been classified as ‘long-period comets’ (i.e. returning only every X- thousands of years or so!). Still others are believed to have passed only \_once\_ in our Solar System - never to return again!...

In the Tychosium simulator however, each one of these “coincidental comets” (as listed below) can be shown to correspond to a transit of Halley’s comet (in accordance with the TYCHOS roster of comet Halley’s passages). To verify these transits for yourselves, please do peruse the TYCHOSIUM simulator. As it is, I would highly recommend the readers to run the Tychosium simulator on their laptops. You may then activate “Halley’s comet” (by checking its box) in the “Planets” menu so as to get familiar with the comet’s celestial motions - as of the TYCHOS model. You may then select any given date and verify comet Halley’s positions in our skies. If you then activate the “Trace” function for Halley’s, you shall see that - in the TYCHOS model - the comet proceeds around a circular (albeit trochoidal) orbit - much like all of the planets in our Solar System.

![](<http://septclues.com/TYCHOS/HALLEY_JUPITER_SATURN_loops.jpg>)

**THE “GREAT COMET” OF 1680 (a.k.a “Kirch’s comet” – or “Newton’s comet)**

What I am about to recount (and uncover) has to be one of the most egregious examples of how a single erroneous observation can lead astray the progress of astronomical knowledge and, indeed, the entire course of science. The so-called “Great Comet of 1680” was notoriously used by Isaac Newton to ‘put to the test’ his law of universal gravitation. In fact, and as few people may know, Newton’s cometary theory was principally based on the “Great Comet of 1680”:

\_\*\*“NEWTON’S COMET 1680-1681\*\* : The comet that was observed by skilled observers, astronomers for the first time in history. Newton's cometary theory is based on it. Also, it was the first comet that was discovered telescopically (by Gottfried Kirch). None of the more ancient Comets of which we have any record was so closely observed as this. It was observed by a large number of scientific people, and \*\*it was mainly from observations of this Comet, that Sir Isaac Newton, as set forth in great length in his "Principia" evolved his cometary theory.\*\* In Proposition XLI, Problem 21, "from three observations given to determine the orbit of a Comet moving in a parabola'' after giving his calculations and drawings, Newton says, "Let the Comet of the year 1680 be proposed." Newton's theories evolved from the observations of this Comet, made by Flamsteed, Halley and others, and \*\*lie at the foundation\*\* of all modern learning on the subject of Cometary orbits.”\_ [“Newton’s Comet 1680-1681”] (<http://astrocoins.mrcollector.eu/index.php/english-menu-1/solar-system/comets/74-newton-s-comet-1680-1681>)

But let us start from the beginning of that most unfortunate, observational mix up : on November 14, 1680, the German astronomer Gottfried Kirch saw an object in his telescope that he (mistakenly) interpreted as a comet. It is important to know that Kirch never reported observing any cometary tail trailing that faint object (a rather dull dot which he first thought was some new, never-seen-before nebula). Here’s an extract from a paper titled “First discovery of the Great Comet of 1680”:

\_”Kirch noticed the comet first at Coburg, early on the morning of the 14th of November, 1680, and seems to have felt a natural pride at being the first to detect a comet with the assistance of a telescope before it had been seen with the naked eye. It was, at the time, not far from the planet Mars, and was just visible to the naked eye. At first, he doubted whether it was a new comet, or a nebula similar to that in the girdle of Andromeda; but its motion soon decided that it was the former.”\_ [“First discovery of the great comet of 1680” - by Lynn. W.T. (1888)] (https://adsabs.harvard.edu/full/1888Obs....11..437L)

In other words, Kirch saw an object close to Mars (moving prograde across the skies) - but although it had no tail, he just decided that it had to be a new comet. As is is, other observers (e.g. Brattle and Foster) also reported that same object (of November 1680): here’s an extract from a Harvard.edu paper:

|  |  |
| --- | --- |
| **\_1680** | Morning comet, observed by Thomas Brattle and John Foster, disappears sometime in November, too close to the Sun to observe. |
|  |  |
| **1681** | Evening comet appears, observed by Thomas Brattle and John Foster. By either genius or ignorance they conclude (correctly) that this is the same comet as the one they just saw last year.\_ [“Harvard College Observatory”]( <https://hea-www.harvard.edu/~fine/Observatory/timeline.html>) |

So we learn that the initial object actually \_disappeared\_ (in the Sun’s glare) in late November, soon after having been observed on November 14, 1680; about a month later, a large comet with a long tail made its spectacular appearance (in the opposite quadrant of our skies) - and it was eventually concluded that it must have been the same object that was observed a month earlier . Alright; so let’s now see what that dull object (“close to Mars”) first observed in November 1680 by Kirch, Brattle and Foster must have been. As we consult the Tychosium simulator, we find that \*\*asteroid EROS\*\* was transiting close to Mars (as seen from Earth) on November 14, 1680. And in fact, on that very date, the JPL/ NASA simulator has \*\*both asteroid EROS and the (supposed) “Comet of 1680””\*\* transiting at \_almost the exact same place\_ in our skies! Moreover, the Tychosium has EROS passing at 0.43AU from Earth (on November 14, 1680) - while the Wikipedia tells us that “the Great Comet of 1680” passed at 0.42AU from Earth (on November 30, 1680). Is anyone willing to chalk all of this up to some “mere coincidence”?

[“Great Comet of 1680” - Wikipedia]( <https://en.wikipedia.org/wiki/Great_Comet_of_1680>)

INSERT IMAGE : Kirch\_comet\_was\_eros\_03.jpg

As you can see, the JPL simulator has in fact Eros and the “1680 comet” transiting in virtually the ‘same place’ on 1680-11-14! I trust that rational thinkers will agree that what Kirch (et al) saw in their telescopes on November 14, 1680 - was evidently nothing but EROS (i.e. the very first near-Earth asteroid to be observed which, according to the Wikipedia, \_“was discovered by German astronomer [C.G. Witt](https://en.wikipedia.org/wiki/Carl_Gustav_Witt) at the [Berlin Observatory](https://en.wikipedia.org/wiki/Berlin_Observatory) on 13 August 1898”\_).

Then, as previously mentioned, around mid-December 1680 a large comet with an impressive tail suddenly appears almost exactly at the OPPOSITE side of Earth. As of historical records, this blazing comet (reputedly \_“one of the brightest comets of the 17th century”\_) was observed to descend in our skies. On December 29, 1680 - it was observed at about 21h of RA, just below the small Delphinus star cluster. Now, according to the Tychosium simulator, this is precisely the location and trajectory of none other than \*\*Halley’s comet\*\* - on December 29, 1680!

INSERT IMAGE: Halley\_1680\_in\_Delphinus\_01.jpg

[The “1680 comet” in the Stellarium simulator (on December 29, 1680)](https://commons.wikimedia.org/wiki/File:Comet\_Kirch\_from\_Rotterdam\_on\_1680-12-29.png)

Most interestingly, a famous medal was minted back in those days (see bottom left of my above graphic): it depicted the actual location of the “Great Comet of 1680”, just below Delphinus. The below-linked paper by Robert McIvor argues convincingly that the (anonymous) author of this medal had to be a quite accomplished and rigorous astronomer - having correctly placed the comet in the portion of the sky where it was actually observed.

[“Was this 1681 Medal a Lucky Charm or a Star Map?”- by Robert S. McIvor (2012)] (<https://articles.adsabs.harvard.edu/cgi-bin/nph-iarticle_query?bibcode=2012JRASC.106..155M&db_key=AST&page_ind=0&plate_select=NO&data_type=GIF&type=SCREEN_GIF&classic=YES>)

We may thus draw the following, preliminary conclusions:

* The “Great Comet of 1680” was mistakenly identified (on November 14, 1680) by Kirch as a comet: it was, in fact, the (still undiscovered) EROS near-Earth asteroid.
* The “Great Comet of 1680” (which then suddenly appeared on the opposite side of Earth in December 1680) was none other than Halley’s comet.
* There was NO such thing as the “Great Comet of 1680”: it was just the first appearance of Halley’s comet - as it approached Earth in December of 1680. Halley’s comet was then again observed (whenever it emerged from the Sun’s glare) in 1681, 1682 and 1683 - but more about that later.

Indeed, we may further realize that this most unfortunate episode (the mis-identification of the “Great Comet of 1680”) was, in all likelihood, the prime cause wich led Sir Isaac Newton to imagine (and formulate mathematically) the absurd, cigar-shaped cometary “orbits”. Until then, most astronomers (including Kepler) had thought that comets moved in straight lines, passing only once across our Solar System - never to return again. Other astronomers thought that comets come in pairs - moving in opposite directions! In fact, Newton himself had intially argued (in a famous controversy with Royal Astronomer Flamsteed) that the ‘comet of 1680’ and the ‘comet of 1681’ were \_two separate comets\_. Here’s a brief summary of Flamsteed‘s position on this matter:

\_” In 1680, The Royal Astronomer, John Flamsteed, gathered observational data about a massive comet that passed Earth. At this time, astronomers thought that comets came in pairs: to the general observer, it appeared as though one comet would go past the earth and get lost in the sun, and then another would arrive from the opposite direction. John Flamsteed made extremely accurate observations of this new comet in 1680, and he became convinced that there was only one comet, not a pair of comets. Moreover, he thought that the comet did not move in a circular pattern, but rather, in an ellipse. However, Flamsteed incorrectly believed that the comet only approached the sun and was forcibly repelled by its cosmic rays, which sent it careening back the way it came. He did not think that it traveled around the sun.”\_ [“John Flamsteed, Isaac Newton, and the Comet of 1680”](<https://www.obscurehistories.com/flamsteed-newton-and-the-comet-of-1680>)

Recommended reading: [“A Change of Mind: Newton and the Comet(s?) of 1680 and 1681” - by David Topper]( <https://link.springer.com/chapter/10.1007/978-0-387-71019-8_11?noAccess=true>)

Eventually, Newton’s mind was led astray by one single, spurious astronomical observation which was reported to him (i.e. the brief sighting of asteroid Eros in November 1680). It is hard to overstate the crucial nature of this observational blunder; after all, it manifestly spurred the very idea of those bizarre, highly-elliptical cometary paths - and their tight ‘U-turns’ around the Sun. So make no mistake: this epochal mix up (of an asteroid and a comet) is no minor matter. It effectively consacrated Sir Isaac Newton (what with his ‘laws’ of universal gravitation) to a near-Godlike status; today, to dare question his sacrosanct “Principia Mathematica” (which contains a huge fold-out drawing of “the Great Comet of 1680”) is tantamount to heresy - in most academic circles.

THE STRANGE REPORTS OF COMET HALLEY’S 1758 RETURN

Two very odd circumstances (in Germany and in France) surround the famed return of Comet Halley in 1758, an all-important event which, as mentioned earlier, was hailed as “the triumph and definitive confirmation” of Edmond Halley’s and Isaac Newton’s theories and predictions.

1): In Germany, a potato farmer and amateur astronomer named Georg Palitzsch was credited to have first observed the return of the famous comet, on December 25, 1758. Strangely enough, the official Dresden scholarly document that announced his finding \_made no mention that it actually was the comet predicted by Halley!\_ Here’s a brief overview of these events:

\_“What was indeed remarkable about his find was that Palitzsch had succeeded in winning the competition against some of the best professional astronomers in Europe, who were also searching for the comet, and who were much better equipped to recover it first. To their embarrassment, Palitzsch’s discovery came four weeks prior to the next independent sighting, which was made by the great French astronomer and comet seeker, Charles Messier (1730-1817). Messier sighted the comet on January 21, 1759. He had been jealously anticipating that he would win the competition to see it first, and rightfully so, for his search had been in progress for about 18 months. The first published announcement of Palitzsch’s find occurred the day before Messier independently saw the comet. Hofmann wrote an article which appeared in the second part of the Dresden Scholarly Announcement of 1759 under the title, “Report of the Comet which has been seen since the 25th of December.” Curiously enough, the document \*\*made no claim that this was the comet predicted by Halley\*\* over one-half century earlier.”\_ [“The Christmas Comet of Johann Palitzsch” – by Gary A. Becker]( https://www.astronomy.org/moravian/C12-Small%20Solar%20System%20Bodies.pdf)

2): In France, an even stranger episode took place; as the young Charles Messier ‘rediscovered’ Halley’s comet in his telescope on January 21, 1759 (almost four weeks after Palitzsch), he promptly shared his finding with his “bad-tempered” old boss, Joseph-Nicolas Delisle. Inexplicably, Delisle immediately ordered Messier to keep the finding a secret! In fact, the Academy of Sciences only announced Messier’s January sighting on April 25, 1759 - as comet Halley was, by then, very close to the Earth and easily visible in our skies!

\_” Charles Messier (1730-1817) rediscovered the comet on 21 January 1759 and followed it until 5 February, where it came too close to the Sun to remain observable. But Messier was only the assistant of Joseph-Nicolas Delisle (1688-1768). Delisle, who wanted to be the first to report the discovery to the Academy of Sciences, imposed the secret to Messier. The other Parisian astronomers, for their part, feared the wrath of Delisle, who had a bad temper, and did not attempt to find the comet. However, on April 1, Delisle and La Caille received a letter from Germany announcing the rediscovery of the comet by Palitzsch. Disaster! Unless completely losing face, it was no longer possible to keep the secret: Messier announced to several members of the Academy that he had seen the comet on 21 January and had also just seen it again that very night. He traced the route of the comet on a large map that he and Delisle presented to the king. The official announcement of the rediscovery by the Academy of Sciences \*\*took place only on April 25\*\*. This was very late; the comet was now very bright and easily seen.”\_ [“Halley’s, the first periodic comet”](<http://cometes.obspm.fr/en/comete-halley-premiere-comete-periodique.html>)

These most bizarre and seemingly inexplicable events bring up three obvious questions:

A: Why wasn’t Palitzsch’s comet of December 25, 1758 initially announced as being Halley’s comet (although he is today recognized as the man who first witnessed its 1758 return)?

B: Why did Delisle order his young assistant to keep quiet about his January 21, 1759 sighting?

C: Why did the Academy of Sciences delay until April 25, 1759 their announcement of Halley’s approach?

I shall now - with the help of the Tychosium similator - submit an illustrated hypothesis as to what may well have prompted all of these oddities - and provide plausible answers to the questions A, B and C :

>>>insert image Halley-palitsch-messier

A: Palitzsch’s sightings of December 1758 were initially questioned, as he apparently (as far as I know) never provided the exact celestial positions / ephemeris data of Halley’s comet. Even if he did so, the scholars in Dresden must have been in doubt about his observations, since Halley’s was seen moving PROGRADE across the skies (remember: astronomers believe that Halley’s only ever moves RETROGRADE).

B: Delisle is reported to have witnessed his young assistant’s discovery in their telescope. He must have been absolutely horrified to see that the comet was moving in PROGRADE direction. He therefore ordered Messier to keep quiet about his discovery - lest he be ridiculed by all of his peers.

C: The Academy of Sciences happily announced the passage of Halley’s comet on April 25, 1759 - since the comet had then reversed direction (as viewed from Earth) and was now finally moving RETROGRADE (against the star background)! The Newtonian (and Copernican) theories were thus salvaged - together with the pride & credibility of the entire world’s scientific community. Phew!...

You may now justly ask yourselves: why was Messier (known today as the greatest comet-finder of all times) ‘beaten’ by the German farmer & amateur astronomer - even though he spent 18 months feverishly scouring the skies for comet Halley’s all-important 1758 return? Well, here’s what we may read on the Italian Wikipedia:

\_“Messier showed great will on that occasion, spending the nights of nearly 18 months at the top of the observatory tower looking for the comet in an area of the sky where it could not be (his chart was simply wrong).”\_ [Charles Messier – Wikipedia]( <https://it.wikipedia.org/wiki/Charles_Messier>)

**HALLEY’S COMET PLAYS PEEKABOO**

**“THE GREAT JANUARY COMET OF 1910” (a.k.a.”The Daylight Comet”)**

\_“At its brightest, it outshone the planet [Venus](https://en.wikipedia.org/wiki/Venus), and was possibly the brightest comet of the 20th century.”\_ [Great January Comet of 1910] (<https://en.wikipedia.org/wiki/Great_January_Comet_of_1910>)

**\*\*THE ‘OFFICIAL’ ROSTER OF HALLEY’S TRANSITS:\*\***

240 B.C./ 164 B.C./ 87 B.C./ 12 B.C./ 66 AD/ 141/ 218/ 295/ 374/ 451/ 530/ 607/ 684/ 760/ 837/ 912/ 989/ 1066/ 1145/ 1222/ 1301/ 1378/ 1456/ 1531/ 1607/ 1682/ 1759/ 1835/ 1910/ 1986/ 2061/ 2134

Source: <https://books.google.it/books?id=DFgMAaU3vA8C&lpg=PR8&ots=8QJqpQzm6h&dq=comet%20of%20year%20396&hl=it&pg=PR15#v=onepage&q=comet%20of%20year%20396&f=false>

Note that the officially predicted interval between Halley’s passage in 2061 and 2134 is only 73 years. Yet, the interval of the officially-claimed Halley’s passages between (for instance) 451 and 530, or 1222 and 1301 - is 79 years! We are thus asked to believe that Halley’s comet’s orbital period can somehow fluctuate by as many as 6 years!

**\*\* THE TYCHOS ROSTER OF HALLEY’S \_DOUBLE\_ TRANSITS (closest passages to Earth):\*\***

210 & 209 B.C./ 134 & 133 B.C./ 59 & 58 B.C./ 17 & 18 / 93 & 94/ 168 & 169 / 244 & 245/ 320 & 321/ 395 & 396 (&397)/ 471 & 472/ 547 & 548/ 623 & 624/ 698 & 699/ 774 & 775/ 850 & 851/ 925 & 926/ 1001 & 1002/ 1077 & 1078/ 1152 & 1153/ 1228 & 1229/ 1304 & 1305/ 1380 & 1381/ 1455 & 1456/ 1531 & 1532/ 1607 & 1608/ 1682 & 1683/ 1758 & 1759/ 1834 & 1835/ 1909 & 1910/ 1985 & 1986/ 2061 & 2062/ 2136 & 2137

Note that ALL the Tychos table’s intervals between Halley’s passages are within the range of 75 or 76 years (for a mean / average period of 75.66 years). In fact, every 227 years (3 X 75.66periodic), Halley’s comet will return in almost the exact same place in our skies.

WAS HIPPARCHUS’ NEW “STAR” OF 134 B.C. HALLEY’S COMET?

\_“In 134 B.C., Hipparchus noticed a star that he had never seen before in the constellation Scorpius. Unsure whether this was a new star or one that he simply hadn’t noticed, he began to compile the first star catalog, showing the positions of the stars in the sky.”\_

Source: “The Ancient World” <https://www.geneseo.edu/~johannes/JS12.pdf>

Perhaps the best-known account surrounding Hipparchus (the greatest astronomer of antiquity) is this brief sighting of a new “star” that he had never seen before. Incidentally, this is reminiscent of the sighting of a supernova by Tycho Brahe (the greatest astronomer of the middle ages), an event which, by all accounts, triggered his interest for astronomy. Now, most popular astronomy texts (e.g. Wikipedia) will tell you that what Hipparchus had observed in 134 B.C. also was a supernova. However, it has later been remarked that what Hipparchus saw (in the constellation Scorpius, in 134 BC) was more probably a comet:

\_“The third-century historian Justin, however, makes it clear that the new “star” Hipparchus saw was actually a comet, a fact that is confirmed by Chinese annals for that year.”\_

Source: “Historical Supernovas” - by F. Richard Stephenson and David H. Clark <https://www.jstor.org/stable/24950375>

In fact, even the Chinese observed the 134 B.C. comet (which they named “the Standard of Tch’e-yeou”):

\_”There can, I think, be little doubt that the Standard of Tch’e-yeou, appearing in 134 B.C., was identical with the new star observed by Hipparchus and begotten in his age, as recorded by Pliny. The record of the observation follows a series of cometary observations, and this alone renders it probable that the new star at least resembled a comet.”\_

Source: “The new star of Hipparchus, and the dates of the birth and accession of Mithridates” - by J.K. Fotheringham (1918) <https://articles.adsabs.harvard.edu/full/seri/MNRAS/0079//0000163.000.html>

The Chinese annals report a passage of a comet in June or July of 134BC. Yet, it seems that no available reports can be found in the astronomy literature regarding the exact month (of 134 B.C) in which Hipparchus himself witnessed that “new star” appearing in the Scorpius constellation. Hence, we may reasonably assume that Hipparchus’ “new star” was none other than Halley’s comet which, according to the TYCHOSIUM simulator, would have transited in Scorpius by the end of 134 B.C. :

[Halley\_in\_Scorpius\_134BC\_01] 🡨-------Image

“DUNLOP’S COMETS” OF 1833 and 1834

According to the paper by T. Henderson linked below, two comets were observed in 1833 and 1834 by James Dunlop at the Paramatta observatory (Australia). The ‘two’ comets were observed to move prograde. As we saw earlier, astronomers had to outright dismiss the hypothesis that these two sightings might have been early apparitions of Halley’s comet - since its orbital motion around our Solar System is believed to be retrograde (i.e. in the opposed direction of our planets).

‘Dunlop’s first comet’ transited at about 17h of RA in mid-October 1833.

‘Dunlop’s second comet’ transited at about 21h40min of RA on March 21, 1834

In fact, on those two dates the Tychosium simulator shows comet Halley moving in prograde direction - and transiting at about 17h of RA and 21h30min of RA respectively!

[“Observations of a Comet in 1833, and of another in 1834, observed; at Paramatta by Mr. Dunlop”](<https://articles.adsabs.harvard.edu/full/seri/MNRAS/0003//0000101.000.html>)

OTHER ANCIENT (NON-IDENTIFIED) TRANSITS OF HALLEY’S COMET

Here follows a list of ancient cometary sightings (reported in the literature) which would all seem to be in agreement with the Tychos roster of Halley’s passages.

\*\*362 B.C. :\*\* ­\_“China, A broom star comet appeared in the west in 362 BC. Ho, (15)”\_

Source: <https://cof.quantumfuturegroup.org/events/58>

In the TYCHOSIUM simulator, select the date -362-07-27 and activate Halley’s comet (in the “Planets” scroll-down menu). You will see that Halley’s comet would indeed have appeared in the west - as seen from the Earth.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\*\*209 B.C. :\*\* \_“Babylonian cuneiform tablet BM 45608 gives an account of a comet seen sometime within the 4th month of -209. A translation by Herman Hunger (1996) says it “appeared in the path of Ea \*\*in the region of Scorpius\*\*; it was surrounded by stars; its tail was toward the east.”\_

In the TYCHOSIUM, select the date -209-04-27 and activate Halley’s comet in the “Planets” scroll-down menu. Also, activate the Zodiac ring in the “Stars & helper objects” scroll-down menu. You will see that Halley’s comet \*\* would indeed have passed very close to Earth on April 27, 209 B.C. - and that it was indeed in Scorpius\*\* on that date.

\*\*245 AD\*\*: \_“Halley-type comet 12P/Pons-Brooks (hereafter 12P) has been linked to observations dating back to 1385 A.D. and possibly, to observations in \*\*245 A.D.\*\* (Green [2020a](https://iopscience.iop.org/article/10.3847/2515-5172/aba2d1/meta#rnaasaba2d1bib5); Nakano [2020](https://iopscience.iop.org/article/10.3847/2515-5172/aba2d1/meta#rnaasaba2d1bib17)), making it the comet with the second longest observational arc of all known comets, after only 1P/Halley.”\_

Source: <https://iopscience.iop.org/article/10.3847/2515-5172/aba2d1/meta>

In the TYCHOSIUM, select the date 245-05-03 and activate Halley’s comet (in the “Planets” scroll-down menu). You will see that Halley’s comet passed very close to Earth in May of the year 245 AD. We may thus surmise that the reported observation of a comet in 245 AD was, in fact, Halley’s comet (just as of the Tychos roster of Halley’s passages).

\*\*396 AD :\*\* \_“A record from year 396 AD reports a comet and 'prior to this, a large yellow star’. This apparition was in summer and ‘in winter… the large yellow star appeared again.’ That the star is reported yellow might be due to atmospheric condition and positive omens but the initial position and date of re-appearance matches planet Venus. Of course, they were able to identify Venus but this mantic text uses ‘a star’ in an astrological way where the nature of the object is not at all important.”\_

Source: <https://books.google.it/books?id=wyRAEAAAQBAJ&lpg=PT286&dq=comet%20of%20year%20396&hl=it&pg=PT286#v=onepage&q=comet%20of%20year%20396&f=false>

In the TYCHOSIUM, select the date 369-06-01 and activate Halley’s comet (in the “Planets” scroll-down menu). You will see that Halley’s comet indeed transited between the Sun and Earth in the summer of 396 AD (just as of the Tychos roster of Halley’s passages). Next, select the date 396-12-30. You will see that Halley’s comet would indeed have been visible from the Earth in the winter of 396 AD.

\*\*323 & 399 & 550\*\*\_” In 323, a comet appeared \*\*in the sign of Virgo\*\*. According to the historians of the Lower Empire, another one appeared in 399, that is 76 years later. This is just the interval of the period attributed to Halley's comet.”\_ [Gustave De Pontécoulant – translated from French](<https://books.google.it/books?id=Y9EaAQAAMAAJ&lpg=RA1-PA394&dq=com%C3%A8te%20halley%20ann%C3%A9e%201305&hl=it&pg=RA1-PA393#v=onepage&q&f=true>)

In this other book, Pontécoulant also mentions another return of the comet in the year 550:

insert image\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

[“A History of Halley’s Comet”- by Gustave de Pontécoulant](https://books.google.it/books?id=RXeF1wBmIAAC&lpg=PA36&dq=comet%20halley%20550%20totila&hl=it&pg=PA15#v=onepage&q&f=false)

In the TYCHOSIUM, we may find Halley’s comet transiting in Virgo on 323-03-05, then on 399-03-05 and then on 550-03-05. Note that, on all three occasions, Halley’s found itself in opposition to the Sun and would thus plausibly have been visible at night with the naked eye - in spite of its considerable distance from the Earth (more than 2AU). Consider also that Halley’s was much brighter back in those days:

insert image\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

THE MYSTERIOUS “OUTBURSTS” OF HALLEY’S COMET

(…) Our results show that the behaviour of the non-gravitational effects in the motion of Comet Halley with time is a very important problem which requires a careful investigation.”

[“Investigations of the long-term motion of Comet Halley: What is a cause of the discordance of results obtained by different authors?” - by Sitarski, G. & Ziolkowski, K. - 1986](<https://articles.adsabs.harvard.edu/full/1986ESASP.250c.299S>)