

G A R Y W. K R O N K
COMETOGRAPHY

A C A T A L O G O F C O M E T S

V O L U M E 1 : A N C I E N T - 1 7 9 9



Cometography

A Catalog of Comets

VOLUME 1: Ancient–1799

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 **CAMBRIDGE**
UNIVERSITY PRESS

C/-43 K1 *Closest to the Earth: -43 May 12 (0.9606 AU), -43 August 1 (0.9962 AU)*

Following the death of Julius Caesar on -43 March 15, one of the most celebrated comets of the ancient world appeared in the skies over Rome. Both Roman and Greek sources report details that are strikingly similar to those reported for a comet seen from China and Korea during that same year. Although the Chinese and Korean records are dated down to the lunar month, there has been debate as to the date indicated by the Roman and Greek sources. Subsequently, there is some question as to whether the European comet is the same as the Asian one.

The earliest reference to this comet came from Augustus, emperor of Rome. Although he probably described the comet a few years after the death of Julius Caesar, Pliny the Elder's *Natural History* (77) is the earliest existing text providing details. According to Pliny, Augustus wrote, "On the very days of my games, a comet was visible over the course of seven days, in the northern region of the heavens. It rose at about the eleventh hour of the day and was bright and plainly seen from all lands. The common people believed that this star signified the soul of Caesar had been received among the spirits of the immortal gods. On this account, it was added as an adornment to the head of the statue of Caesar that I not long afterwards dedicated in the Forum." The Roman historian Gaius Suetonius Tranquillus reworded Augustus' statement in his *The Lives of the Caesars* (120).

The Roman philosopher Lucius Annaeus Seneca wrote *Quaestiones Naturales* around 63 and noted a comet "which burst forth after the death of the deified Julius, during the games of Venus Genetrix about the eleventh hour of the day." Additional mention of this comet was made by Calpurnius Siculus in *Eclogue I* (60), Plutarch in *Parallel Lives* (100), Dio Cassius in *Roman History* (229), Julius Obsequens in *A Book of Prodigies after the 505th Year of Rome* (4th century), and Servius in his commentaries on Virgil's *Eclogue* and *Aeneid* during the 4th century. It should be noted that Servius gave the visibility as "three days", and specifically noted the object was seen at "mid-day" and "during the daytime."

The actual date of the Roman event has, until recently, been considered uncertain. From the details above it can be noted that the comet was seen "during the games of Venus Genetrix." According to John T. Ramsey and A. Lewis Licht (1997) the temple to Venus Genetrix was inaugurated on -45 September 26. Previous astronomers, including A. G. Pingré (1783), had indi-

cated the comet was seen at the end of September, but Ramsey and Licht made special note that within the two years of the temple inauguration a new celebration called the *ludi Victoriae Caesaris* had been created which occurred around July 20–23, and the games of Venus Genetrix were combined with the *ludi Victoriae Caesaris*. Thus, Caesar's comet was probably seen near the end of July in –43.

An original source also indicates the comet was seen in China. Pan Ku was the primary compiler of the *Han shu* (100). In the annals he says a "broom star" was seen in the summer during the month of –43 May 18 to June 16. The comet "appeared in Shen [α , β , γ , δ , ϵ , ζ and κ Orionis]." Additional details are given in the astronomical chapter, where it is said the comet was "seen at the northwest. It was reddish-yellow and measured about 8° long. After several days passed it measured over 10° and pointed toward the northeast. It was then found at the division of the Shen." J. Williams (1871) reiterated the Chinese account, but added, "After about two months (?) it turned again to the west." He added, "The duration of this comet is doubtful." Ho Peng Yoke (1962) said Williams translated the statement incorrectly and that it should have read, "More than two years later western Chiang revolted."

Although the Koreans also reported a "sparkling star" seen at Shen sometime during the month of –43 May 18 to June 16, the text is probably not original. The account appeared in the *Chronicle of Silla*, contained in the Korean text *Samguk Sagi* (1145). This text was written by Kim Pusik. Ho Peng Yoke (1962) said Pusik frequently copied the ancient accounts from Chinese texts, but not with great accuracy.

As long ago as 1783 Pingré noted in his *Cometographie* that the Chinese and Roman comets were probably unrelated. Debate on this issue has resurfaced every so often since that time. Ramsey and Licht wrote a 236-page book on the subject during 1997. They were the first to offer evidence that the Roman comet was seen during late July instead of the previously accepted September, which brought the Roman and Chinese comets closer than ever before. With the observations at hand, they not only concluded the two comets were one and the same, but determined the orbit given below which would enable the comet to meet all the details published in Rome and China. They concluded the comet had been a relatively bright object when seen in China, but then faded away and that it was invisible for about a month before a dramatic outburst in brightness made it an obvious naked-eye object for about a week near the end of July.

T	ω	Ω (2000.0)	i	q	e
–43 May 25 (UT)	17	170	110	0.22	1.0

ABSOLUTE MAGNITUDE: $H_0=3.0$ (Kronk)

FULL MOON: May 2, June 1, June 30, July 30

SOURCES: *Eclogue I* (60), p. 225; *Quaestiones Naturales* (63), book 7, pp. 262–3; *Natural History* (77), book 2, pp. 236–7; *Han shu* (100), 9:5b, 26:31b; *Parallel Lives* (100), pp. 605–7; *The Lives of the Caesars* (120), book 1, section 88; *Roman History* (229), book 45,

pp. 418–19; *A Book of Prodigies after the 505th Year of Rome* (4th century), pp. 308–11; *Samguk Sagi* (1145), p. 147; A. G. Pingré (1783), 277–9; J. Williams (1871), p. 9; G. F. Chambers (1889), p. 556; R. F. Rodgers (1952), p. 177; *Minor Latin Poets*, translations by J. W. Duff and A. M. Duff, Cambridge: Harvard University Press (1954), p. 225; Ho Peng Yoke (1962), p. 147; A. A. Barrett (1978), pp. 95–6; J. T. Ramsey and A. L. Licht, *The Comet of 44 B.C. and Caesar's Funeral Game*, Atlanta: Scholars Press (1997).