

## Political astronomy: Cosmic phenomena recorded by Muslim writers and historians\*

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Unexpected phenomena like eclipses, comets, meteors and earthquakes were regarded ill omens for rulers and emperors and so were routinely monitored by historians and chroniclers. Recording such events in the political history was a well-established tradition in the 'Middle East' empires.

Ali al-Mas'ūdī (895-957 CE) in his *Muruj-ul-Zahb* (Golden Meadows) relates the comet of 912 CE, most likely the Halley's Comet, to a host of disasters that befell over Baghdad. In a similar vein, Ahmad-bin-Mahmad (ca. 1552 CE), in his compilation *Nigāristān* (picture gallery), links a comet seen in 941-42 CE (most likely the comet X/941 R1) with the famine and pestilence that occurred around that time. The tradition of recording 'politically-significant' cosmic events continued uninterrupted for a long time, and, not surprisingly, even travelled to India.

North India was dominated by the Mughal Empire during the 16th and 17th centuries. Its chronicles mention a number of solar and lunar eclipses, fireballs and comets. The emperors took occurrence of comets quite seriously and even sought remedial measures.

In 1759-60, Muḥammad 'Alī al-Ḥusainī wrote a significant history of the Mughal (Taimoor) dynasty, *Tārīkh -i Rāḥat Afzā*, in Persian, covering the period 1359-1759. By this time, the Mughal Empire had already been reduced to a nominal status. Al-Husaini records the appearance of a comet in the Hijri year 1154 AH (1741-42), and a detonating fireball the next year. He also mentions an earthquake that took place later, in 1757-58. I have examined the astronomical content of the book, in particular the circumstances about the comet (Kapoor 2015). Here I give a very brief summary of my findings.

Al-Ḥusaini's observations cover the period 9 December 1741-2nd week of March 1742. He writes that a comet appeared at evening in the West, during the last three lunar months of the year 1154 AH. Afterwards it made its appearance in the East, during the early morning, and for a few days, in the first month of 1155 A.H. It was a naked eye observation but no astronomical details are given. The reference to an evening sighting of *a star with tail* followed by another apparition in the mornings can come from actual observations only. It is significant that he concluded that it was the same comet.

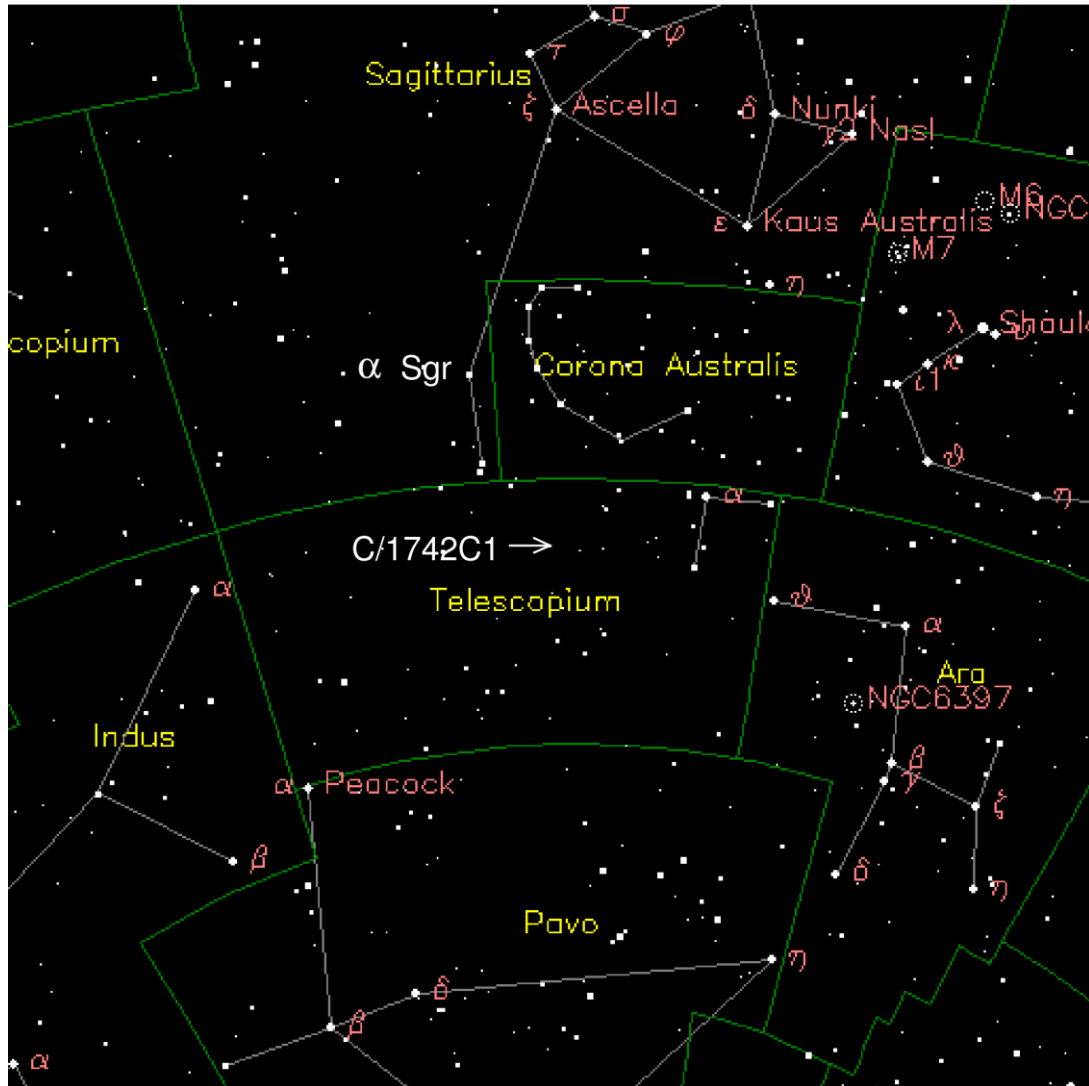
I have crosschecked al-Ḥusaini's observations with modern cometographies. The only comet that can be identified with it is the bright comet of 1742, now designated C/1742 C1 ( $q = 0.76577$  AU;  $t_p$  - 1742 February 8.696 UT). I have computed apparent positions of this comet and made brightness estimates corresponding to the stated period. Al-Ḥusaini wrote that he could see the comet in *Shawwāl* 1154 (9 December 1741- 7 January 1742). This is unlikely, because its altitude difference from the sun was then very small. He was based in central India from where he could certainly have seen it during latter part of the next lunar month *Dhu-al-Qadāh* (7 January 1742 - 6 February 1742). The comet was seen from the Cape of Good Hope on 5 February (and in Europe in March 1742). From his records, al-Ḥusaini's is the first observation of the comet. In that sense, he is the discoverer of the bright comet.

We do not have the precise dates of his sightings. Why did he mention *Shawwāl* sighting which appears to be unreal? If the comet was bright enough to be seen in December 1741 – January 1742 from India, its sighting from the Cape should also have been earlier. Al-Ḥusaini wrote his Chronicle some two decades after the event, presumably from memory rather than log book. That may explain the inadvertent mention of *Shawwāl*. It is, however, clear that al-Ḥusaini's discovery of the comet was the result of regular monitoring of the sky rather than an accident.

The Mughal Empire and the Muslim rule in India in general were already tottering. There were no more political histories to be written and the tradition of recording naked-eye observations of unexpected phenomena came to an end. Modern astronomical observations started in India shortly afterwards, towards the close of the

18th century. The exercise, however, was an all-European affair. Indian introduction to modern astronomy came still later.

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**Fig. 1.** Sky at the time the comet rose on the morning of Feb 05, 1742; Corona Australis had risen and the comet and the stars  $\alpha$  Sagittarii (*Rukbat*) and  $\beta$  Capricorni (*Dabih*) roughly defined the eastern horizon as at Burhānpur, in central India.

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