

Examination of ancient text reveals details of Ibn Sina's sighting of supernova

April 28 2016, by Bob Yirka

نارا خالصة ، ولا يكون لها برد مطفى ، ولا أيضا تصعد صعودا سريرا معنا في حيز النار إلى أن تبلغ المكان الشديد قوة النارية ، فيعرض لذلك أن يبقى التهابها واشتعالها مدة طويلة إما على صورة ذؤابة أو ذنب ، وأكثره شمالي وقد يكون جنوبيا ، وإما على صورة كوكب من الكواكب ، كالذي ظهر في سنة سبع وتسعين وثلاث مائة للهجرة ، فبقى قريبا من ثلاثة أشهر يطفئ ويلطف حتى اضمحل ، وكان في ابتدائه إلى السواد والخضرة ، ثم جعل كل وقت يرمى بالشمرد ويزداد بياضا ويلطف حتى اضمحل . وقد يكون على صورة لحية ، أو صورة حيوان له قرون ، وعلى سائر الصور ؛ وإنما يكون ذلك إذا كانت هناك مادة كثيفة واقنة ، تالط أجزاءها يسيرا يسيرا وتحلل عنه متصعدة كروائد شمرية أو قرنية . ومنها المسماة أعترأ كأن تشريها تشعير . وكل ما ثبت منها

- (١) بالعدد : وبالعدد ، سا || في : ساقطة من ب ، ط (٢) كالموجودة : كالموجود
د ، ط ، م (٣) ويخلفها غيرها : ويخلفه غيره ب ، د ، سا ، ط || موضعها : موضعه ب ، د ، سا ، ط .
(٥) في حقيقة : وحقيقة سا (٧) مقامه : مكانه د ، سا || يشتمل : ساقطة من د .
(٨) وخفيفة : خفيفة سا (٩) وخلصت : وحصلت سا . (١٠) وذات : ذات سا
(١١) معنا : معنا د (١٣) طويلة : ساقطة من د ، سا (١٤) للهجرة : الهجرية ط ؛
ساقطة من سا (١٧) أو صورة : أو على صورة د ، سا || حيوان : حيوان ط (١٨) متصعدة : متصعدة م
(١٩) تشريها : بشرها د ، ط ، م || تشعير : تشعرد ؛ تشعير ط ، م || ما ثبت : ما ثبت ب ؛ ما ثبت ط .

The Arabic text from the report of SN 1006 of Ibn Sina in al-Shifa from the

Arabic edition by Madkur et al. (1965), page 73. The relevant text starts in the middle of the second line from the top and ends almost at the (leftmost) end of the 3rd-to-last line from the bottom of the main text. The writing in the left margin is the Arabic line number 15. The 4th line (line 14) reads (starting from the right) for the 2nd to 4th word *kawkab min al-kawakib*, i.e. a star among the stars, and at the end of that line it specifies the year (the leftmost word is *hijra*). The lines at the bottom indicate variant readings in different manuscripts, none of which change the content and meaning of the relevant text about the new star: the words for long and *hijra* are missing in one or two manuscripts. Credit: arXiv:1604.03798 [astro-ph.SR]

(Phys.org)—A trio of German researches has uncovered evidence of the Arabic scholar Ibn Sina's sighting of supernova 1006 (SN 1006). The new evidence will sit alongside that of others around that globe that reported details of what has been described as the brightest stellar event ever recorded by human beings. In their paper uploaded to the preprint server *arXiv*, Ralph Neuhaeuser, Carl Ehrig-Eggert and Paul Kunitzsch describe the text under study, their translation of it and the relevance of the information recorded by the ancient skygazer.

Ibn Sina was a Persian scientist and philosopher, who as part of his observations, traveled a lot and wrote about what he saw, along with his interpretations of subjects ranging from medicine to astronomy. It was one of those texts, called *Kitab al-Shifa*, about physics, meteorology, and especially astronomy that caught the attention of the researchers—most particularly a section that described a bright object appearing in the sky in the year 1006. The section had been studied before, but the account had been attributed to a discussion of a comet. In this latest look, the researchers suggest that the description was actually that of SN 1006. In addition to the timing, the detailed description, they note, sounds more like the sudden appearance of an exploding star. In their translation, Sina describes an object that was very bright and that changed color over time

before fading away—even noting at one point that the object threw out sparks.

SN 1006 was noted and described by others around the world, from places as far-flung as Morocco, Japan, Yemen and China, but none of those descriptions included information about the object changing colors. Sina wrote that the [object](#) started out as faint greenish-yellow, that it twinkled a lot, especially at its brightest, and that it became whitish before it disappeared altogether.

Most modern astronomers believe that SN 1006 was not just a Ia supernova (which occur when a white dwarf is pulled into another star causing it to blow up due to the overabundance of matter), but that it was the result of two white dwarfs colliding. This new information from an ancient part-time astronomer, the researchers suggest, may help to better understand an event that occurred over a thousand years ago.

More information: An Arabic report about supernova SN 1006 by Ibn Sina (Avicenna) arXiv:1604.03798 [astro-ph.SR]
arxiv.org/abs/1604.03798v1

Abstract

We present here an Arabic report about supernova 1006 (SN 1006) written by the famous Arabic scholar Ibn Sina (Lat. Avicenna, AD 980-1037), which was not discussed in astronomical literature before. The short observational report about a new star is part of Ibn Sina's book called al-Shifa', a work about philosophy including physics, astronomy, and meteorology. We present the Arabic text and our English translation. After a detailed discussion of the dating of the observation, we show that the text specifies that the transient celestial object was stationary and/or tail-less ("a star among the stars"), that it "remained for close to three months getting fainter and fainter until it disappeared", that it "threw out sparks", i.e. it was scintillating and very bright, and that the color

changed with time. The information content is consistent with the other Arabic and non-Arabic reports about SN 1006. Hence, it is quite clear that Ibn Sina refers to SN 1006 in his report, given as an example for transient celestial objects in a discussion of Aristotle's "Meteorology". Given the wording and the description, e.g. for the color evolution, this report is independent from other reports known so far.

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