

Tiny bit of Comet ISON survives Friday's sun burn

Swati Shinde Gole | TNN

Pune: Just as the comet-gazing community was getting more excited about it, Comet ISON, the most-awaited astronomical phenomenon of the year, disintegrated on early Friday when it was closest to the sun. However, scientists at the National Centre for Radio Astrophysics (NCRA) said a small fragment has survived and there are chances of its visibility.

"We now know that the comet indeed broke up and one fragment did manage to survive intact and is now on its orbit away from the sun. This fragment has gas and dust, which is seen to be blown back like a fan due to the sun. We would have to wait for a day or so more, to get a clearer picture," said Niruj Mohan Ramanujam, Pune-based scientist from NCRA.

It was expected that the comet, when it would be closest to the sun on November 28, may break up and disintegrate. "Last night, was exciting since everyone around the world was watching live images from SOHO spacecraft to see what it would do. The story is not over yet. It is all tremendously interesting," Ramanujam said.

Arvind Paranjpye, director of Nehru Planetarium in Mumbai, told TOI on Friday, "The comet did not survive its close encounter with the sun and broke up. This possibly happened around 2am on November 29."

After November 20, the comet was too close to the sun to be observed by any earth-based telescope. However, Solar & Heliospheric Observatory (SOHO) in space, a cooperative effort between the European Space Agency and National Aeronautics and Space Administration that continuously observes the sun's region, spotted ISON.

TOO CLOSE FOR COMFORT



The comet was pulled apart by the strong gravity of the sun when it went too close. A comet is not a solid piece of rock, but more like a dusty snowball with rocks and pebbles and ice mixed together held loosely. Hence, it was easily torn apart

DRAMA IN SPACE

- As the comet was approaching the sun on Thursday, it began fading and emitting heavy dust
- It looked like it had broken up into pieces as it went too close to the sun on Friday
- It was sighted soon, but only as a faint smudge leading scientists to believe it had disintegrated completely
- Later, it was discovered that a small part probably survived the close passage to the sun
- It is still emitting huge amount of dust and gas
- It is not very probable for the comet to rejuvenate and become bright enough for naked eye observations

“The diameter of the sun is 14 lakh km and the comet swept as close as 12 lakh km over the sun's surface. The comet's surface would have heated up to a few thousand degrees celcius at this close a distance from the sun. This resulted in heating and evaporation of the comet and throwing out a large part of its gas and dust

Niruj Mohan Ramanujam | NCRA SCIENTIST

"This observatory cannot observe the immediate neighbourhood of the sun. The camera has a disk that blocks the sun to protect its sensitive detectors. There were some spectacular images of the comet as it approached the sun and then the comet was hidden behind the protective disk or the SOHO camera. After that there are no signs of its reappearance. This indicates that the comet disintegrated," Paranjpye said.

It is too early to tell whether the remains would become brighter or not, and whether it will grow back a new tail or not, said Ramanujam. "Though it is not going to be as spectacular as expected, this comet has so far

been full of surprises," he added.

He was part of the national campaign 'Eyes on Ison' which was organised by reputed organisations working on astrophysics, scientists, non-governmental organisations and amateur astronomy clubs to promote science, scientific thought, hands-on experimentation and day and night sky astronomy experiments for citizens.

"Now, we will not have a spectacular comet in our December morning skies, as hoped for. However, the excitement and suspense around what would happen to it, and now, what is going to happen to it, is huge," he added.