

→ RIDDLE #4

ESA's NEO Coordination Centre

Find an NEO!

95 % of all NEOs larger than 1 km are already known, but only about 18 000 from the estimated 2 million NEOs larger than 30 m have been detected so far. The reason is that they are very faint and become observable only when they come close to Earth. This year in July a so far unknown NEO, now named 2020 OM₃, passed the Earth at a distance of 10 million km. The estimated size was 40 m, which is about the diameter of the Tunguska asteroid that exploded in Siberia on 30 June 1908 and flattened 2000 square kilometers of forest.

ESA is using its 1 m telescope located in Tenerife, Spain, typically 4 nights per month to observe NEOs. The focus is on follow-up observations. Once regular follow-up targets have been observed, we run a search programme to look for new objects. Images are taken of a number of fields and this is repeated four times.

2020 OM₃ showed up on 24 July in the four images taken between 2:46 UT and 3:36 UT as a faint speckle of light. But during these 50 minutes it had crossed quite a significant part of the 0.7° field-of-view of the telescope, making it quite a challenge to spot.

The animation reported on the next page is a crop of the full field-of-view: nonetheless, 3 moving objects are visible, including 2020 OM₃. The four exposures are repeated in an endless loop and tiny dots are hopping on a straight line.

The challenge this month is to discover the moving objects:

- if you find any, send us the approximate beginning and end of the track in the given RA/DEC coordinate system.
- Bonus questions: can you give us the official names of the objects that you found?

Hint: 2020 OM₃ is the fastest of all moving objects, and it's also the faintest. Good luck with your asteroid hunting!

Please, send your responses before the proposed deadline to the following e-mail: neocc@ssa.esa.int.

Use as subject of your e-mail: "Riddle #4 – solution".

Moreover, please let us know if you would prefer not to have your name included in the list of correct replies.



N.B.: the animation has been tested to work with Adobe Acrobat as PDF viewer.

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