

space situational awareness

→ NEAR-EARTH OBJECTS

Current NEO statistics

Almost 600 objects are now present in our risk list.

- Known NEOs: 15 564 asteroids and 106 comets
- NEOs in risk list*: 597
- New NEO discoveries since last month: 153
- NEOs discovered since 1 January 2017: 153

Focus on

Every month about 40 known or recently discovered asteroids come within 0.05 astronomical units, or about 19 lunar radii, from our planet. In some cases, such as in the month of December 2016, four or even five objects reach their closest approach distance on the same day. Clusters of asteroid flybys often attracts the interest of the media and of the public, but are these occurrences unusual? Upon applying statistical considerations to the present discovery rate and assuming a uniform probability of discovery every day, it turns out that they are not. A cluster of at least four objects approaching on the same day is expected about three months every four; a cluster of five about three times per year. In reality, the groupings are likely to happen even more often. It is well known that astronomical observations peak around new Moon, when the sky is darker. Therefore asteroids flying-by near full Moon, while equally common, are more likely to go undiscovered and therefore not be included in the counts.

Upcoming interesting close approaches

Two fly-bys of large NEOs are expected in February.

- (5604) 1992 FE is a well-known asteroid almost 1 km in diameter which will fly-by at 13 lunar distances on 24 February, reaching magnitude 12.
- 2017 BQ6 is a new discovery, approximately 200 m in diameter, which will reach magnitude 15 during its 7 February fly-by.

Recent interesting close approaches

Three objects came closer than the Moon in January.

- 2017 BH30 came to approximately 7 Earth radii from the planet surface on 30 January, becoming brighter than magnitude 14.
- Two more newly discovered objects, 2017 AG13 and 2017 BX, also came closer than the Moon during the month of January. The former was about 30 metres in size.

News from the risk list

Two objects discovered in the second half of January entered the top-10 of our risk list.

- 2017 BL3 reached Torino Scale level 1 for a few days in January, but was subsequently removed from the list once predisccovery observations were located in the Pan-STARRS archive.
- 2017 BL30 is another new addition to the list, currently with a Palermo Scale of -2.5 .

* The risk list of all known objects with a non-zero (although usually very low) impact probability can be found at <http://bit.ly/neorisklist>

In other news

- NASA has approved two Discovery-class missions to visit small solar system bodies, one targeting a metallic main-belt asteroid (Psyche), and the other aiming at Jupiter Trojans (Lucy).

Upcoming events

The seventh edition of the Meeting on Celestial Mechanics (CELMEC) has been announced for the fall.

- Asteroids, Comets and Meteors (ACM 2017) Conference, 10–14 April 2017, Montevideo, Uruguay
<http://acm2017.uy/>
- IAU 330: Astrometry and Astrophysics in the Gaia sky, 24–28 April 2017, Nice, France
<http://www.iau.org/science/meetings/future/symposia/1163/>
- IAA Planetary Defense Conference, 15–19 May 2017, Tokyo, Japan
<http://pdc.iaaweb.org/>
- CELMEC VII, 3–9 September 2017, San Martino al Cimino (VT), Italy
<http://adams.dm.unipi.it/~simca/celmecVII/index.html>

Smallest objects discovered last month

The table presents all objects smaller than about 15 metres discovered in the month of January 2017. New discoveries as small as 10 metres are becoming almost routine, and objects of a few meters are now common.

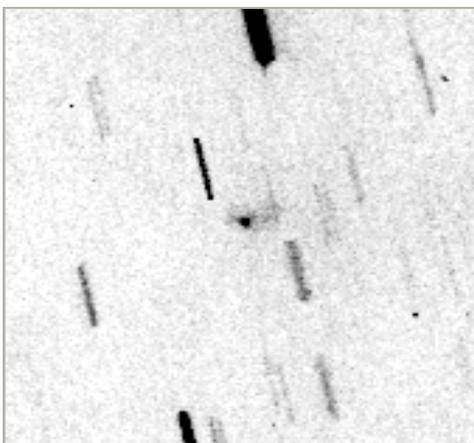
Object name	Size range in m	H magnitude	Orbital class	Discovery date	Close approach date	Miss distance in lunar distances
2017 AZ3	3–6	30.0	Apollo	2017-01-05	2017-01-07	1.3
2017 BG30	3–7	29.5	Apollo	2017-01-28	2017-02-05	2.5
2017 BH30	5–10	28.8	Apollo	2017-01-29	2017-01-30	0.1
2017 BD6	5–11	28.6	Apollo	2017-01-26	2017-01-24	2.0
2017 BX	7–15	28.0	Apollo	2017-01-20	2017-01-25	0.7
2017 BR6	7–15	27.9	Aten	2017-01-26	2017-01-23	4.8
2017 BB7	7–16	27.9	Aten	2017-01-26	2017-01-31	3.0
2017 BA7	7–16	27.9	Apollo	2017-01-27	2017-01-26	1.1
2017 BR5	8–17	27.7	Apollo	2017-01-25	2017-01-22	2.1
2017 BN6	8–18	27.6	Apollo	2017-01-26	2017-01-23	1.7
2017 BK30	8–18	27.6	Apollo	2017-01-27	2017-01-05	8.6

Links for more information

Website: <http://neo.ssa.esa.int>

Close approaches: <http://neo.ssa.esa.int/web/guest/close-approaches>

Risk List: <http://neo.ssa.esa.int/web/guest/risk-page> or <http://bit.ly/neurisklist>



An object previously classified as an asteroid has been found active in observations collected by our team with ESA's OGS telescope.

The image to the left, processed to better show the weak activity of the object, shows the comet and a faint tail to the right (corresponding to the West in the sky).

The object is now known with the cometary designation C/2016 VZ18 (PANSTARRS)

Image credits: ESA/NEOCC

neo.ssa.esa.int

To subscribe or unsubscribe to this newsletter and for further information please send an email to neocc@ssa.esa.int

