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June 2002 Asteroid/Comet News

Updated: 14 August 2002

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3 June 2002

It was announced that Klet Observatory's new KLENOT telescope bagged its first near-Earth asteroid discovery, **2002 LK**. LK was discovered late on June 1st, about three days after it passed Earth at around nine lunar distances.

7 June 2002

MPEC 2002-L30 updated the EKBO binary, **2001 QW322**.

The U.S. Geological Survey announced the "recent launch" of its Astrogeology Research Program Web site, starting out very strong on Solar System planetary sciences but light on minor bodies. Check out a great news page and the Comet 19P/Borrelly material on the DS1 MICAS page.

This program is at the USGS Flagstaff Field Center in Flagstaff, Ariz., which also hosts the International Astronomical Union Working Group for Planetary System Nomenclature's Gazetteer of Planetary Nomenclature, funded by NASA and currently holding surface namings for asteroids Eros, Gaspra, Ida/Dactyl, and Mathilde.

Karin family news

An article by David Nesvorny *et al.* of the Southwest Research Institute (SwRI) in the 13 June 2002 issue of the journal Nature explains how they calculated the orbits of each of the Karin cluster of 39 asteroids backward until all were found to share a single orbit – that of the pre-breakup parent object. Thus they conclude that the breakup occurred 5.8 million years ago, give or take a couple hundred thousand years. This family is named for its largest member, **832 Karin** (JPL Java 3D Orbit View), and has one other large member, **4507 1990 FV**.

- SwRI 13 June news release & diagram
- Reports 12 June from New Scientist, AFP on SpaceDaily & Space.com
- Reports 13 June from Nature itself & CNN, plus 18 June reports from Astronomy.com and Sky & Telescope.

Bigger backyard search effort

Sky & Telescope reported 7 June about Roy Tucker's poster at the June American Astronomical Association meeting telling that his new backyard observatory with three fixed-mount 14" telescopes can watch unattended for minor objects down to limiting magnitude 20.5. With the help of the Global Network of Astronomical Telescopes (GNAT), he hopes to develop a worldwide network of telescopes. Tucker posted an explanation of his concepts to the Minor Planet Mailing List, republished in the Cambridge Conference Correspondence

for 24 Sept. 1998.

The MPC Minor Planet Discoverers list credits Tucker with 33 discoveries during 1996-2001. For two of these he received both the first and second Benson Prizes for NEA discoveries in 1997 and 1998, and he has co-credit for a comet, too: P/1998 QP54 (LONEOS-Tucker).

Follow-up: The Planetary Society 2002 Shoemaker Near Earth Object Grants announced 30 July 2002 include funds to support Tucker's work.

Main Belt transportation system?

At the 10-11 June annual meeting of NASA's Institute for Advanced Concepts (NIAC), Global Aerospace Corporation (GCA) delivered a status report on its phase II concept study, "Cyclical Visits to Mars via Astronaut Hotels" (GCA calls them "AstroTels"). Funded through next January by NIAC, the concept in development is a way to cost-effectively service a small Mars base via routine five-month flights between Mars' moon, Phobos, and Earth's L1 Lagrange point (out toward the Moon). GCA states at the bottom of its AstroTel page that this concept also provides NASA "a transportation architecture that could be put in use to explore other planetary bodies, potentially near-Earth and Main Belt asteroids."

1 July 2002 update: The PDF reports from this meeting are now available, and may appear later in HTML form. The AstroTel presentation slides [1.75Mb PDF] refer only to Earth-Mars transportation. For this multi-billion-dollar concept to work, there has to be considerable development of techniques and hardware for low-gravity mining in a vacuum, which would in turn be directly useful for exploring and mining asteroids and comets.

July 2002 update: Florida Today reported 2 July on the presentation, saying that, "While it might seem far-fetched, the [NASA Institute for Advanced Concepts] apparently believes in it enough to grant the company up to $500,000 to further develop the idea."

MUSES-C asteroid sample return safety review

AC/C's mid-June report: There is some very interesting reading in the illustrated draft "Quarantine review of the MUSES-C Project: Surface sample returned from asteroid 1998 SF36" issued by Biosecurity Australia, of the Australian Department of Agriculture, Fisheries & Forestry, with comments from interested parties requested by the end of this month (June 2002) [21K PDF memorandum|2.2Mb PDF document]. For one thing, while the **MUSES-C** mission Web sites in Japan are quite out of date, this 42-page document shows an active program at work. And, for another, the further exploration and future uses of minor objects will involve biologic safety concerns and procedures similar to those explained here in some detail.

The document references "Evaluating the Biological Potential in Samples Returned from Planetary Satellites and Small Solar System Bodies: Framework for Decision Making," produced by the Space Studies Board (SSB) of the U.S. National Research Council in 1998 [full HTML version], and also refers to April and October 2002 meetings of the Committee on Space Research (COSPAR) under the U.N. Outer Space Treaty (OTS) as regards assessing risks for this mission. In evaluating the 1998 SSB report, the Australian document looks at concerns over extromophile microbes, and notes that prions (infectious proteins) were not considered.

NASA's Planetary Protection Advisory Committee issued a brief recommendation in May 2002 about the biological risks of a **25143 1998 SF36** return sample, which the Australian document quotes the April COSPAR meeting as endorsing. From everything so far, it appears that the sample return will be approved.

For more about the MUSES-C mission and Australian preparations for its sample return, see Leonard David's 17 April 2002 article on Space.com.

Comets announced

No non-SOHO comets were announced during June 2002. However, **C/NEAT (2002 L9)** was discovered in June, when it was initially considered to be asteroidal, but was found to be cometary on 2 July 2002 and announced that day.

Risks concerns removed

There were several risk listing removals during 18-20 June. The NEODyS Risk page pulled **2002 GM5** from its "Lost objects" list. And the European Spaceguard Central Node (SCN) observation campaign for **2002 HW** was retired, along with a campaign for **2001 SB170**, which had been posted since last September. **2002 LV**, which appeared on the JPL and NEODyS risk pages 4 June, and which had been dropped by NEODys on 15 June, was removed by JPL's page on the 18th.

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