During 1999-2004 we have been confronted with an enormous increase of new discovered asteroids, as a result of the introduction of CCD-methods into asteroidal searches. Projects such as LINEAR, NEAT AND LONEOS have resulted in almost complete covering of all main belt-asteroids below V=19.5 (typical CCD-search magnitude for new asteroids during the last years). Smaller projects have been constrained, in most cases, to only follow-up of the newly discovered asteroids. However, the larger programs such as LINEAR etc. have been set up in order to search for "potentially hazardous asteroids" (PHA's), from which the larger individuals (larger than 1 km) may cause global effects, if they should hit the earth.

A lot of these "dangerous" objects have been discovered during the searches of 1997-2004; but the set of all possible larger PHA's is far from complete (estimated at about 1500 objects larger than 1km, wherefrom presently about 900 members have been discovered with secured orbits), especially if we are also concerned about smaller objects that may cause local effects. As a matter of fact, the astronomical community has put a goal to discover all PHA's larger than 1km before the end of this decade.

Therefore two sources of PHA's remain during the coming years, which should be "emptied" in either case and this as soon as possible, in order to have time for reflection how to deal with their contents in the future, in case one of the objects should be on its way to earth:

1: High inclination PHA's, which tend to be discovered much later than their ecliptical counterparts.

2: Intrinsically fainter PHA's, which may appear in all directions of the sky (and for which it may be necessary to use larger instruments).

In order to search for these objects we propose a method that is based on the Farinella-algorithm (see ref. "The main belt as a source of near-earth asteroids", 1996) , in which a total estimate is made how many PHA's may be on their way to earth (from the storage region between Mars and Jupiter). Fragments are indeed continuously produced by inter-asteroidal collisions (cfr. comet-asteroid Elst-Pizarro, 1996) and are sometimes injected into resonant, chaotic orbits undergoing large variations of eccentricity. They are therefore amenable to planetary encounters (Menichella et all, 1996). In order to get some experience it is mandatory to study and observe the regions wherefrom other well known resonant objects such as the 'Hungaria"- and "Phocaea"objects are coming. Quantitative models have become now available and calculations have been performed e.g. with software provided by the St. Petersburg Institute of Planetary Studies resulting in sets of specific directions for PHA's distributed all over the year. We are confident that searching for PHA's in these "resonant" directions may be very effectively.

References (Abstract):

Strange comet discovered at ESO, 1996, ESO Press Release, 16 September 1996.

The main belt as a source of near asteroids, 1996, M. Menichella, P. Paolicchi and P. Farinella, Earth, Moon and Planets,
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