

## → RIDDLE #1

### ESA's NEO Coordination Centre

#### An NEO with a peculiar orbit

The recently discovered asteroid 2020 HY5, firstly observed by Mt. Lemmon Survey on 23 April 2020, has an interesting particularity: it roughly passes half of its orbital period of about 387 days inside 1.3 au and the other half outside. Such distance is used for the definition of NEOs: the perihelion distance of an NEO must be below 1.3 au. 2020 HY5 actually spends 192.0 days below 1.3 au and 194.9 days above that distance.

And here is a riddle:

- Assuming an NEO that spends exactly 50% of its time inside 1.3 au and 50% of its time outside 1.3 au, what would be the maximum aphelion such an NEO could have?
- As a bonus, would you be able to find similar cases in our database? (Hint: you can use the advanced search functionality in our left menu)

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

Use as subject of your e-mail: "Riddle #1 – solution".

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