

Hi everyone,

I have compiled a list of binary (or suspected binary) asteroids that contains all the johnson database (<https://www.johnstonsarchive.net/astro/asteroidmoons.html>) and the Gaiamoon database (<https://www.oca.eu/fr/gaiamoons>) as well as recent potential discoveries reported on the IOTA mailing list.

Running Occult on this list for the next 4 weeks gives me 8528 events world wide (target magnitude cutoff at 14.0). You can download the full list of events (xml file to read with Occult) here: (click on the button which looks like an arrow pointing down and says "Download Raw file" when hovering the mouse): https://github.com/jfgout/Occultations/blob/main/Binaries_2024-11-27_to_endOfYear.xml

I encourage everyone interested in binary asteroids to download the xml file and load it in Occult to check if there are any occultations in their area. Note that for Gaiamoon targets you can get these from this webpage: <https://gaiamoons.imcce.fr/>

My goal is to encourage people to observe these occultations that could reveal details about these binary asteroids. For most of them, we do not know much about the systems (relative size of the components, revolution period, ...) and observing occultations would be highly valuable.

Additionally, I have compiled a somewhat arbitrary list of what look like some of the best events for North America. This is based on brightness of the target star, duration of event and the path covering large areas with observers in

North America. Please, keep in mind that this is not an exhaustive list, just those events that really caught my eye.

The list:

November 29-30th : (24465) 2000 SX155 occults UCAC4 539-002297 (Mv = 8.9). The path goes over Oregon, Nevada, Arizona (including Flagstaff) and New Mexico.

Details: <https://cloud.occultwatcher.net/event/1429-24465-18498-649126-U002297>

(196980) 2003 UC75 occults TYC 1309-00474-1 on 2024-Dec-05 at 09:11 UT. Star Mv = 12.1

Path goes from SoCal to North Carolina, passing over Phoenix.

Details: <https://cloud.occultwatcher.net/event/1434-196980-77995-649316-T00474-1/1974009>

(43534) 2001 DZ78 occults UCAC4 499-054334 on 2024-Dec-08 at 08:30 UT (Mag = 11.30)

Mississippi, Alabama, Georgia South & North Carolinas.

Details: <https://cloud.occultwatcher.net/event/1437-43534-143100-648602-U054334>

(238) Hypatia occults TYC 186-00610-1 on 2024-Dec-09 at 09:39 UT (Mag = 11.9)

Another good one for the South-Eastern US, with 5 stations announced already. Path goes through Texas, Louisiana, Mississippi, Alabama, Georgia, South Carolina & North Carolina.

Details: <https://cloud.occultwatcher.net/event/1438-238-106673-648244-T00610-1>

(11549) 1992 YY occults TYC 1865-01455-1 on 11 Dec 2024 (Mag = 11.1)

Path crossing from San Diego (CA) to Boston (MA).

Details: <https://cloud.occultwatcher.net/event/1440-11549-80679-649564-T01455-1>

(1408) Trusanda occults TYC 753-02001-1 on 2024-Dec-16 at 04:37 UT (Mag V = 10.8)

Path going from a bit south of Tucson (AZ) to Richmond (VA)

Details: <https://cloud.occultwatcher.net/event/1445-1408-99726-648674-T02001-1>

(26416) 1999 XM84 occults UCAC4 564-022884 on 2024-Dec-16 at 09:28 UT (Mv = 10.9)

For the Canadians, not afraid of the cold.

Details: <https://cloud.occultwatcher.net/event/1445-26416-86354-649426-U022884>

(49348) 1998 WO6 occults HIP 17503 on 22 Dec 2024 (mv = 8.3)

For Canada and North-East US.

Details: <https://cloud.occultwatcher.net/event/1451-49348-53332-649251-H17503>

(556) Phyllis occults TYC 1384-00258-1 on 2024-Dec-23 at 08:31 UT ($M_v = 9.4$)

Path goes just South of Tucson, North of Dallas, south of Atlanta.

Details: <https://cloud.occultwatcher.net/event/1452-556-113614-649280-T00258-1>

Happy thanksgiving and happy binary asteroid hunting!

JF