

Arecibo IOTA campaign occultation Sept. 14 am, s. Calif. to Ontario

Update with moon path

An account of the interesting discovery and occultation confirmation of the duplicity of (4337) Arecibo is described at <https://occultations.org/publications/rasc/2024/AreciboMoonAccount.pdf> . The binary nature of Arecibo was also detected by the Gaia spacecraft from the astrometric wobble caused by the two objects; the wobble period was measured to be 1.5 days. From this and the occultation observations, European scientists determined the orbit of the satellite about the center of mass of the system.

The campaign for this event is being managed by individual sign-ups on the OccultWatcher and communications via the IOTAoccultations group email. The desire is that observers select their sites accommodating one another so that we maximize coverage of the predicted path.

The Lucky Star/Gaiamoons prediction page for the event is at <https://gaiamoons.imcce.fr/occ.php?p=20734>; at the bottom of that page is a zoomable Google map showing the paths for the occultations by both components of the Arecibo system. On that map, the dashed blue line is the central line for the primary component, while the solid blue lines are for the limits for the primary. The predicted path for Arecibo's moon, and its uncertainty, is enclosed by two thin red lines. As you can see, on Sept. 14th, the moon should occult the star in a zone just north of the path for the primary, with occultations by both components likely near the northern limit of the primary's path, but with the uncertainties, that's not certain. We'll want to cover the area from the southern limit for the primary to the northern uncertainty zone for the satellite, and a little farther north and south.

Clicking anywhere on the map described above generates a bubble with local circumstances, including the predicted mid-event U.T. at that location. Also, a thin dashed green line is temporarily drawn parallel to the path through the selected location, and the shadows of both the primary and the moon are shown in the path at the point closest to the selected location.

The OW cloud page for the event with zoomable Aladin photographic star charts is at <https://cloud.occultwatcher.net/event/1352-4337-99374-649520-T00394-1> (similar zoomable charts are on the Lucky Star event page noted above, and the event's zoomable Google Map with occultation details in the right margin is at <https://cloud.occultwatcher.net/event/1352-4337-99374-649520-T00394-1/1756500>).

The predicted duration for a central occultation by the primary is 0.9s while that for the moon is 0.5s; frame exposures of 0.2s or less are preferred. Recording should start a minute before the mid time for your location, and last for another minute after the predicted time.

This page will be updated as information becomes available but the most recent information will be that on the IOTAoccultations email group. In particular, we are hoping that updated information from the September 6 event in Europe.

David and Joan Dunham

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