

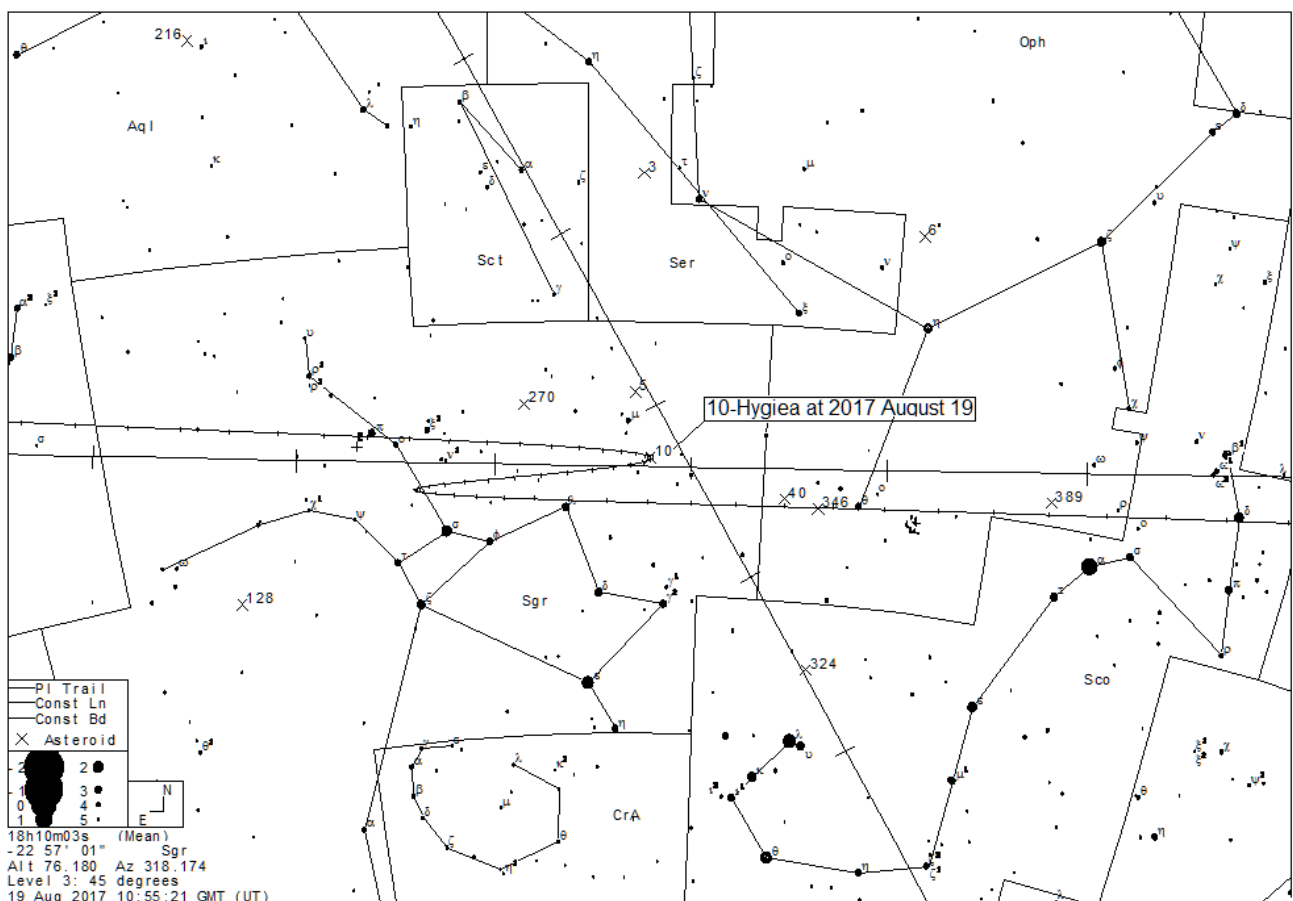
Sat Aug 19th – 10 Hygiea Occults 4UCAC 336-126858 Long Duration Asteroid Occultation

Here is a heads-up on a special asteroid occultation event.

ESO's VLT SPHERE (using adaptive optics) and Joseph Durech (DAMIT) have a program to observe asteroids and collect light curve data to develop rotating 3D models with respect to time. The aim is to reconstruct reliable nonconvex models of about 40 asteroids. The asteroid 10 Hygiea is one of these. Hygiea is the fourth-largest asteroid (largest is Ceres ~ 945kms) in the Solar System by volume and mass, and it is located in the asteroid belt about 400 million kms away. Dimensions 530×407×370km. Mass estimated to be 2.9% of the total mass of the belt.

On Saturday evening 19th August, the asteroid 10-Hygiea will occult a mag. 9.2 star 4UCAC 336-126858. What is unique with this event is the expected maximum duration of 343.8 seconds. That's 5 minutes and 43 second's duration!

The reason for the long duration event is that the asteroid will occult the star only two days after appearing to becoming stationary in the sky at the end of its retrograde passage, as shown in the sky-chart below.

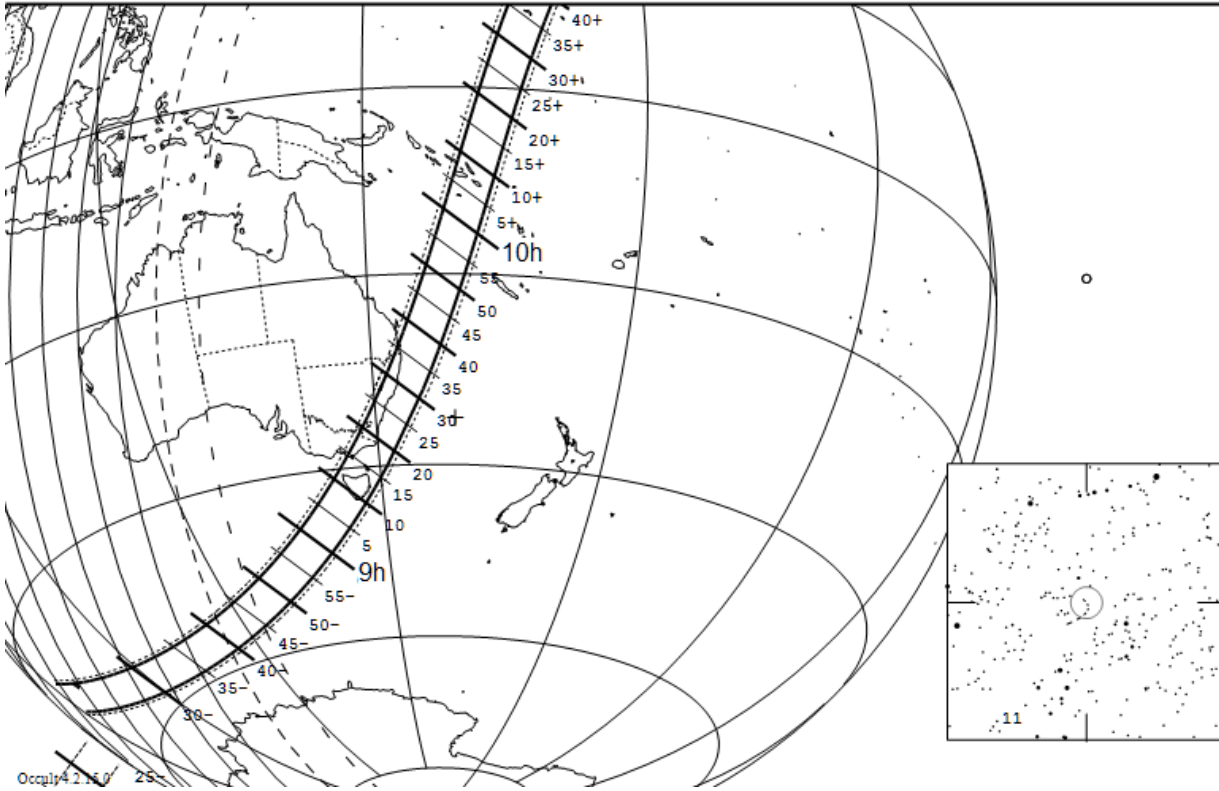


10 Hygiea occults 4U 336-126858 on 2017 Aug 19 from 8h 22m to 11h 9m UT

Star:
 Mv = 9.2 Mp = 9.2 Mr = 9.2
 RA = 18 8 59.4297 (J2000)
 Dec = -22 57 20.192
 [of Date: 18 10 4, -22 56 58]
 Prediction of 2017 May 26.0

Max Duration = 343.8 secs
 Mag Drop = 1.4 (1.1r)
 Sun : Dist = 125 deg
 Moon: Dist = 157 deg
 : illum = 7 %
 E 0.030"x 0.030" in PA 90

Asteroid: (in DAMIT, ISRM)
 Mag = 10.3
 Dia = 453km, 0.285"
 Parallax = 4.008"
 Hourly dRA = 0.130s
 dDec = 2.39"



Other identifiers for UCAC 336-126858: HD 313997: TYC 6843-2322-1. SIMBAD and UCAC4 Catalogue give its visual magnitude as 10.

DAMIT has two candidate models for 10-Hygiea. I've attached the two models set up for event time.

