

ESO's VLT Sphere and DAMIT

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. Up till now, due to the limitations of modelling software, only convex profiles were produced.

The aim is to reconstruct reliable nonconvex models of about 40 asteroids.

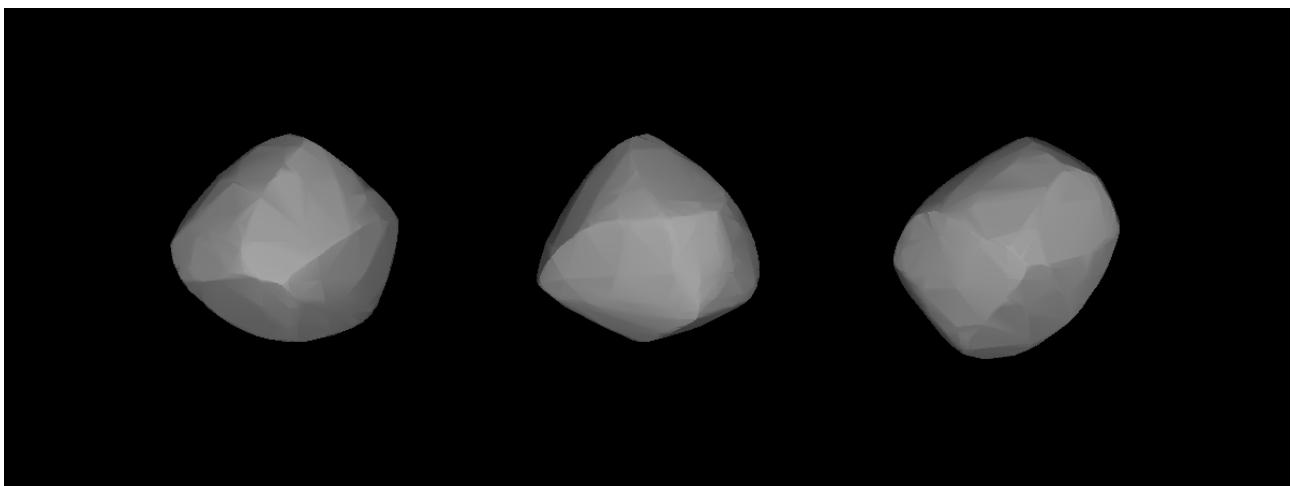
Below is a list of targets that will be observed by SPHERE, for which detailed nonconvex shapes will be constructed.

Special request by Joseph Durech: "If some of these asteroids have in next let's say two years some favourable occultations, it would be nice to combine the occultation chords with AO and light curves to improve the models."

2 Pallas, 7 Iris, 8 Flora, 10 Hygiea, 11 Parthenope, 13 Egeria, 15 Eunomia, 16 Psyche, 18 Melpomene, 19 Fortuna, 20 Massalia, 22 Kalliope, 24 Themis, 29 Amphitrite, 31 Euphrosyne, 40 Harmonia, 41 Daphne, 51 Nemausa, 52 Europa, 59 Elpis, 65 Cybele, 87 Sylvia, 88 Thisbe, 89 Julia, 96 Aegle, 105 Artemis, 128 Nemesis, 145 Adeona, 187 Lambertia, 211 Isolda, 324 Bamberga, 354 Eleonora, 451 Patientia, 476 Hedwig, 511 Davida, 532 Herculina, 596 Scheila, 704 Interamnia

Occultation Event: Asteroid 10 Hygiea – Sun 26th Feb 16h37m UT

The magnitude 11 asteroid 10 Hygiea is expected to occult the magnitude 12.5 star 2UCAC 21608371 on Sunday 26th Feb 16h37m UT (= Mon 3:37am). Magnitude drop of 0.24 will require video.



DAMIT asteroid model of 10 Hygiea - Astronomy Institute of the Charles University: Josef Durech, Vojtěch Sidorin

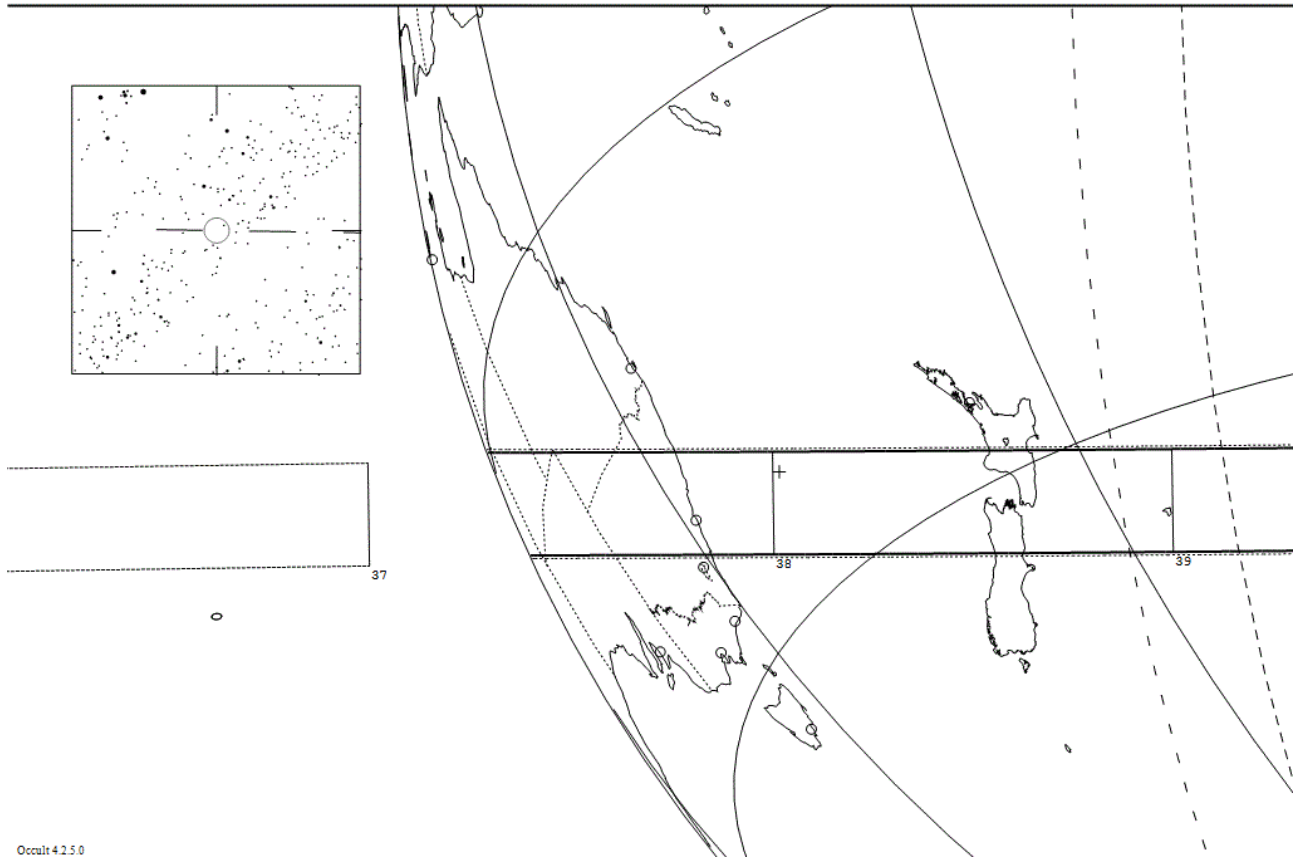
Hygiea is the fourth-largest asteroid (largest is Ceres ~ 945kms) in the Solar System by volume and mass, and it is located in the asteroid belt about 400 million kms away. Dimensions 530×407×370km. Mass estimated to be 2.9% of the total mass of the belt.

10 Hygiea occults 2UCAC 21608371 on 2017 Feb 26 from 16h 37m to 16h 44m UT

Star:
Mv = 12.5
RA = 18 1 38.9642 (J2000)
Dec = -25 19 13.439
[of Date: 18 2 41, -25 19 21
Prediction of 2016 Dec 27.0

Max Duration = 15.5 secs
Mag Drop = 0.24
Sun : Dist = 68 deg
Moon: Dist = 69 deg
illum = 0 %
E 0.010"x 0.006" in PA 85

Asteroid: (in DAMIT, ISAM)
Mag = 11.0
Dia = 453km, 0.207"
Parallax = 2.913"
Hourly dRA = 3.554s
dDec = 0.72"



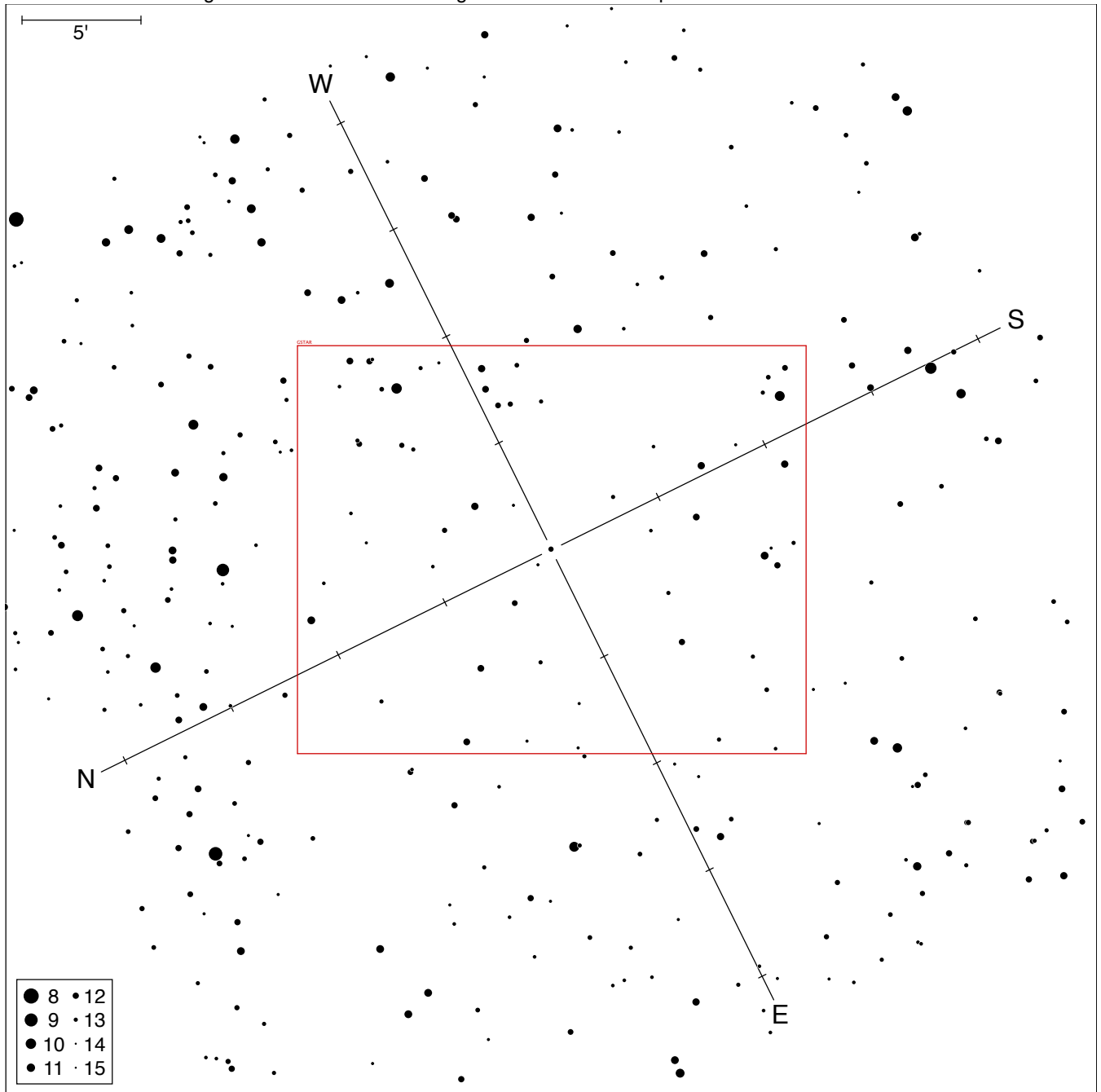
More info and maps here ...

http://www.asteroidoccultation.com/2017_02/0226_10_50376.htm

On the following page is a PDF Finder chart for the Hygiea field, as seen using an Alt-Az mount - with an 8" LX90 at f/5 (1000 mm focal length). The red rectangle is 21x17 arc minutes, which is about right for a standard video camera. Thanks to Tony Barry.

Several club members have announced (on Occult Watcher) their intention to observe this event. If you would like to participate contact ... enquiry@wsaag.org

ID: 4UCAC324-124938 Name: 10 Hygiea Feb 2017 candidate FoV: 45' RA/Dec: 18h 01m 39s / -25°19'13" Alt/Az: 26.8° / 103.8° Chart/s: 7 Imager FoV: 21.35' x 17.12' Imager Scale: 1.77 arcsec/px



4UCAC324-124938 () Mag: 12.60 [Star] PM: RA -3.10 Dec -2.90 mas/yr

