



1080 Orchis

1080 Orchis, provisional designation 1927 QB, is a dark background asteroid from the inner regions of the asteroid belt. It was discovered on 30 August 1927, by German astronomer Karl Reinmuth at the Heidelberg Observatory in southwest Germany.^[18] The carbonaceous F-type asteroid has a rotation period of 16.1 hours and measures approximately 22 kilometers (14 miles) in diameter. It was named after the flowering plant Orchis.^[3]

Orbit and classification

Orchis is a non-family asteroid of the main belt's background population.^[5] It orbits the Sun in the inner asteroid belt at a distance of 1.8–3.0 AU once every 3 years and 9 months (1,374 days; semi-major axis of 2.42 AU). Its orbit has an eccentricity of 0.26 and an inclination of 5° with respect to the ecliptic.^[1] The asteroid was first observed as A906 BH at Heidelberg in January 1906. The body's observation arc begins with its official discovery observation in August 1927.^[18]

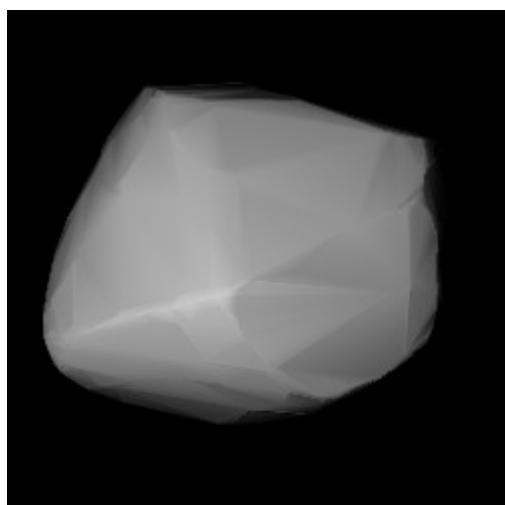
Naming

This minor planet was named after the flowering plant Orchis, a genus in the orchid family. The official naming citation was mentioned in The Names of the Minor Planets by Paul Herget in 1955 (H 102).^[3]

Reinmuth's flowers

Due to his many discoveries, Karl Reinmuth submitted a large list of 66 newly named asteroids in the early 1930s. The list covered his discoveries with numbers between (1009) and (1200). This list also contained a sequence of 28 asteroids, starting with 1054 Forsytia, that were all named

1080 Orchis



Modelled shape of *Orchis* from its lightcurve
Discovery^[1]

Discovered by	K. Reinmuth
Discovery site	Heidelberg Obs.
Discovery date	30 August 1927
Designations	
MPC designation	(1080) Orchis
Pronunciation	/'ɔ:rkɪs/ ^[2]
Named after	<u>Orchis</u> (flowering plant) ^[3]
Alternative designations	1927 QB · 1955 DT A906 BH
Minor planet category	main-belt · (inner) ^[4] background ^[5]
Orbital characteristics ^[1]	
Epoch	4 September 2017 (JD 2458000.5)
Uncertainty parameter 0	
Observation arc	111.76 yr (40,821 days)
Aphelion	3.0452 AU
Perihelion	1.7924 AU
Semi-major axis	2.4188 AU
Eccentricity	0.2590
Orbital period (sidereal)	3.76 yr (1,374 days)
Mean anomaly	278.54°

after plants, in particular flowering plants (*also see list of minor planets named after animals and plants*).^[19]

Physical characteristics

In the Tholen classification, *Orchis* is an uncommon F-type asteroid, a type which belongs to the wider C-complex of carbonaceous asteroids.^{[1][4]}

Rotation period and poles

In 2010, three rotational lightcurves of *Orchis* were obtained from photometric observations. Lightcurve analysis gave a rotation period of 16.061, 16.075 and 16.1 hours with a brightness amplitude of between 0.23 and 0.31 magnitude ($U=2+/-2/3$).^{[13][15][16]} A modeled lightcurve based on optical data from a large collaboration network found a concurring period of 16.0657 hours and two spin axis of $(255.0^\circ, 27.0^\circ)$ and $(71.0^\circ, 28.0^\circ)$ in ecliptic coordinates (λ, β) .^[14]

Diameter and albedo

According to the surveys carried out by the Infrared Astronomical Satellite IRAS, the Japanese Akari satellite and the NEOWISE mission of NASA's Wide-field Infrared Survey Explorer, *Orchis* measures between 20.755 and 24.62 kilometers in diameter and its surface has an albedo between 0.029 and 0.051.^{[6][7][8][9][10][11][12]} The Collaborative Asteroid Lightcurve Link adopts the results obtained by IRAS, that is, an albedo of 0.0430 and a diameter of 23.28 kilometers based on an absolute magnitude of 12.2.^{[4][10]}

<u>Mean motion</u>	$0^\circ 15^m 43.2^s / day$
<u>Inclination</u>	4.5873°
<u>Longitude of ascending node</u>	2.0437°
<u>Argument of perihelion</u>	57.028°
Physical characteristics	
<u>Mean diameter</u>	$20.755 \pm 8.470 \text{ km}$ ^[6] $21.797 \pm 0.130 \text{ km}$ ^[7] $21.86 \pm 0.26 \text{ km}$ ^[8] $22.918 \pm 0.241 \text{ km}$ ^[9] $23.28 \pm 1.7 \text{ km}$ ^{[4][10]} $23.53 \pm 6.59 \text{ km}$ ^[11] $24.62 \pm 6.75 \text{ km}$ ^[12]
<u>Synodic rotation period</u>	$16.061 \pm 0.004 \text{ h}$ ^[13] $16.0657 \pm 0.0005 \text{ h}$ ^[14] $16.075 \pm 0.0207 \text{ h}$ ^[15] $16.1 \pm 0.1 \text{ h}$ ^[16]
<u>Pole ecliptic latitude</u>	$(255.0^\circ, 27.0^\circ) (\lambda_1/\beta_1)$ ^[17] $(71.0^\circ, 28.0^\circ) (\lambda_2/\beta_2)$ ^[17]
<u>Geometric albedo</u>	0.029 ± 0.002 ^[7] 0.03 ± 0.02 ^[11] 0.031 ± 0.032 ^[12] 0.0331 ± 0.0028 ^[9] 0.0430 ± 0.007 ^{[4][10]} 0.0508 ± 0.0499 ^[6] 0.051 ± 0.001 ^[8]
<u>Spectral type</u>	<u>Tholen</u> = F ^{[1][4]} <u>B-V</u> = 0.624 ^[1] <u>U-B</u> = 0.206 ^[1]
<u>Absolute magnitude (H)</u>	12.133 ± 0.002 (R) ^[15] · 12.20 ^{[1][4][8][9][10][11]} · 12.32 ^[6] · 12.43 ^[12]

References

1. "JPL Small-Body Database Browser: 1080 Orchis (1927 QB)" (<https://ssd.jpl.nasa.gov/sbdb.cgi?sstr=2001080>) (2017-10-29 last obs.). Jet Propulsion Laboratory. Retrieved 28 November 2017.
2. "orchis" (<https://www.oed.com/search/dictionary/?q=orchis>). *Oxford English Dictionary* (Online ed.). Oxford University Press. (Subscription or participating institution membership (<https://www.oed.com/public/login/loggingin#withyourlibrary>) required.)