

UFO sighting: Date: Jan 1st 2018 – disc across face of the ‘Supermoon’

Date: Jan 1st 2018, Time: Approx. 23:10.

Location: Back garden, Postcode ME87SD, Kent: Latitude: 51° 22' N, Longitude: 0° 33' E
Moon Azimuth: 161°, Moon Altitude: 57° (based on values from ‘Starry Night Pro’ software)
Weather: Clear, cold but dry.

Telescope: Meade 8” LX200R SCT (2000mm @ f/10) using 26mm Plossl EP (Eyepiece) with a 2” 90° diagonal (so Moon image laterally inverted left to right as shown below). With the 26mm EP, the ‘Supermoon’ was clearly larger than normal & practically had same apparent size as EP Field of View (FOV) at approx. 0.56 deg., with a magnification of approx. 76x power.

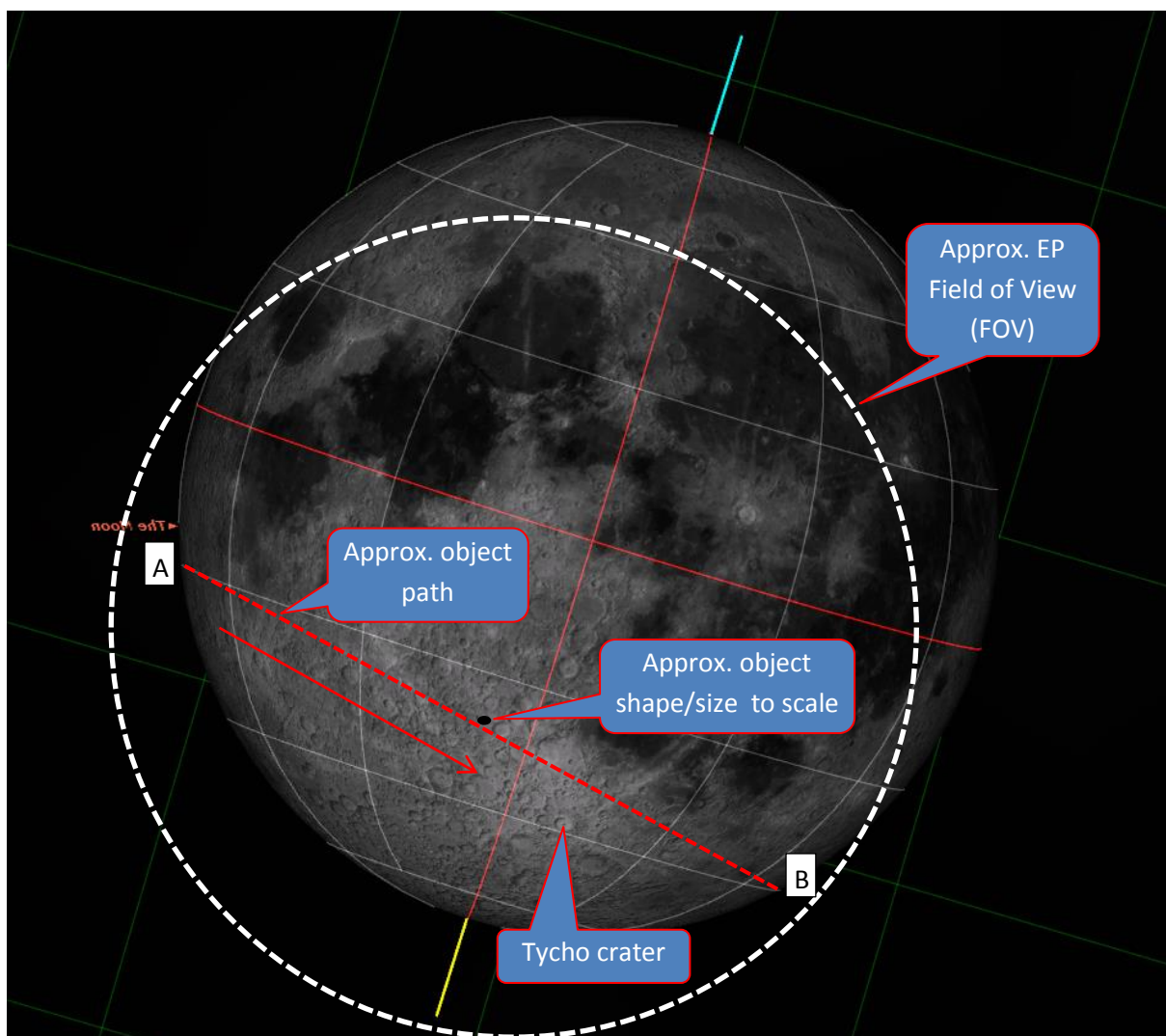
Description:

Whilst viewing Moon through Telescope EP with the naked eye, a small black, elliptical shaped disc, traversed the southern hemisphere of moon in a straight line from A to B as indicated in diagram (terrestrial West to East) in about 5sec, at relatively constant speed.

There were no lights or sounds associated with the object, it was a plain, solid black silhouette seen as line-of-sight object against face of Moon. I estimated the object’s apparent size to be approx. 1/60 moon’s diameter (0.56 arcminutes) & the path length 0.46 degrees (27.6 arcminutes).

As the object’s edges were very well defined, & the scope was focused on the Moon, the object appeared to be very distant, more than several miles away.

No other aircraft were apparent near the Moon at time of sighting.



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Basic calculations to understand approx. relative size/speed of object.

Starry Night Data															
Universal Time:	01/01/2018 23:10														
Location:	Gillingham, UK														
Latitude:	51° 22.150' N														
Longitude:	0° 33.317' E														
Azimuth:	161.24														
Altitude:	57.05														
Distance from observer: xm	351201.7 km	351201700	m												
Diameter: D	3476 km	3476000	m												
Angular size: Øm	0° 34'	0.567	deg												

Object angle: Øo - degs	0.009444														
based on D/n where n =	60														
Object path angle - degs	0.466667	based on Starry Night Data moon diagram													
path time duration - sec	5														

Object diameter - d (m)	xo (m)	xo/xm	path (m)	speed (m/s)	speed (km/h)
0.5	3033	0.001%	24.71	4.94	17.79
1	6067	0.002%	49.41	9.88	35.58
2	12133	0.003%	98.82	19.76	71.15
5	30333	0.009%	247.06	49.41	177.88
10	60666	0.017%	494.12	98.82	355.76

Object:	$\tan(\phi_o) = d/xo$				
	$\phi_o = \arctan(d/xo)$				
	$d = xo * \tan(\phi_o)$	$xo = d / \tan(\phi_o)$			
Moon:	$\tan(\phi_m/2) = D/2 * xm$				
	$\phi_m = 2 * \arctan(D/2 * xm)$				
	$D = 2 * xm \tan(\phi_m/2)$				
Øm	0.55258	deg	check only		

Note: Image below is showing path length measured in Starry Night Pro (Moon image not laterally inverted).

