

Craig Obney and Birnam Hill (1A)

Report of surveys carried out by Alan Dawson on 3 March 2014

Background

The purpose of this survey was to measure the height of Craig Obney and Birnam Hill in order to find out which is higher. Craig Obney is mapped as 403m, Birnam Hill as 404m. Craig Obney has a trig pillar with flush bracket recorded as 403.25m. Heights were measured using a Leica Geosystems 1250 GPS antenna and controller, with subsequent processing using OS Rinx data to obtain precise measurements. Conditions for the surveys were excellent: bright and clear with light wind and good visibility.

Craig Obney survey

The summit has a trig pillar on an obvious summit, with a low rock-lined shelter a few metres away that is slightly lower. A small clump of heather about two metres from the trig point is slightly higher than the base of the pillar. This was used as the survey point. A Leica Disto laser level was used to confirm that this point was higher than a small rock by the trig pillar and also higher than the heather by the low shelter.

Summit feature: Heather clump

Summit survey time: 45 minutes

Antenna height at summit: 1.03m

Margin for error: 0.05m

Base station data:

<i>Base station:</i>	BRAE	DRUM	DUDE	EDIN	FAUG	GLAS	KILN
<i>Distance away:</i>	55	100	45	69	95	86	45
<i>Summit ellip height:</i>	455.977	456.027	456.043	456.074	455.975	456.022	455.981
<i>Col ellip height:</i>	330.227	330.269	330.303	330.291	330.226	330.269	330.212

Col survey time: 30 minutes

Antenna height at col: 0.88m

Margin for error: 0.2m

Seven base stations were used for summit and col.

Mean elliptical summit height: 456.01m

Mean elliptical col height: 330.26m

WGS84 to OSGB36 adjustment: 52.934m for summit, 52.897m for col

Adjustment constant: 0.16m

Result:

Summit: 403.24m

Latitude: 56° 31' 32.861"N

Longitude: 3° 35' 28.025"W

Summit gridref: NO 02217 38220

Col: 277.52m

Col gridref: NO 0311 3941

Drop: 125.72m

Outcome: No status change, Craig Obney remains a Hump



Craig Obney summit survey in progress

Birnam Hill survey

Birnam Hill has a large well-made cairn on its summit, with a few steps that allow one to walk up to the top of the cairn. There is a flat and slightly loose rock on top of the highest natural ground at the edge of the cairn. The survey point was set up on top of this rock, with the tripod at full height to raise it to the same level as the flat top of the cairn and ensure good satellite data recording. The height of the antenna was measured to the base of the rock, 15-20cm below the tripod feet.

Summit feature: Very large round well-made cairn

Summit survey time: 45 minutes

Antenna height: 1.22m

Margin for error: 0.05m

Base station data:

<i>Base station:</i>	BRAE	DRUM	DUDE	EDIN	FAUG	GLAS	KILN
<i>Distance:</i>	55	100	45	69	95	86	45
<i>Summit ellip height:</i>	456.498	456.541	456.577	456.557	456.507	456.631	456.491

Seven base stations were used for the summit. Choosing the nearest five base stations to reduce the data spread made less than 1cm difference to the result.

Mean elliptical summit height: 456.54m

WGS84 to OSGB36 adjustment: 52.896m

Adjustment constant: 0.16m

Result:

Summit: 403.81m

Latitude: 56° 32' 36.778"N

Longitude: 3° 34' 32.672"W

Summit gridref: NO 03208 40174

Drop: 171m

Outcome: Birnam Hill remains a Marilyn as it is 0.57m higher than Craig Obney



Birnam Hill summit survey in progress