



# Call for Observations

## *Meteors from comet C/2015 D4 (Borisov) Omicron Columbids*

### Summary

Southern African observers have a unique opportunity to confirm the existence of the potential meteor stream from comet C/2015 D4 (Borisov) on the early morning of 2017 July 29. The earth passes very close to the predicted centre of the 1-revolution stream at 02h22 SAST, at which time southern Africa is favourably placed to observe potential meteors from the comet's debris stream. The next opportunity with earth so close to the centre of the stream only occurs in 2029, when southern Africa is also favoured, but the comet is then a further twelve years past perihelion. Observations are requested this year to confirm any meteors from the parent comet which passed perihelion in its 700 year orbit most recently in 2014.

### Highlights

- Closest approach to earth at 00h22 UT (02h22 SAST) on July 29
- Distance at time of closest approach 0.0006 AU (0.23 lunar distance).
- Possible duration 1-2 hours

### Background

Comet C/2015 D4 was discovered by G Borisov and announced on CBET no. 4071, issued on 2015 March 3. The comet was then around magnitude 17 and fading. Borisov had in fact discovered this comet some four months after it passed perihelion on 2014 October 28, at a distance of 0.86 AU. The acquisition of more accurate astrometric data enabled Jenniskens and Lyttinen (2017<sup>#</sup>) to announce that the earth would pass through the 1-revolution dust stream of the comet at a distance of only  $r-\Delta = +0.0006$  AU on 2017 July 29 at 00h22 UT (02h22 SAST = solar longitude 125.858°).

Observers are requested to be on the look out for meteor activity from a potential radiant at R.A. = 79° (05h16), Dec. = -32°. With a geocentric velocity of 45.9 km/s the meteors will be medium speed.

### Observations required

- Visual observations using the naked eye; all observed meteor paths must be plotted on the appropriate gnomonic chart for analysis post-event.
- CCTV camera imaging; saved in a format suitable for processing and analysis using frame-grabbing software post-event.

<sup>#</sup> Jenniskens P. and Lyttinen E. (2017), CBET 4403 POTENTIAL NEW METEOR SHOWER FROM COMET C/2015 D4 (BORISOV)

## Predicted radiant and other showers active

Potential meteors from Comet C/2015 D4 (Borisov) will appear to emanate from a radiant located near the star omicron Columbae. The radiant only rises around half an hour before predicted maximum activity and one hour later will be low above the eastern horizon as shown in Figure 1.

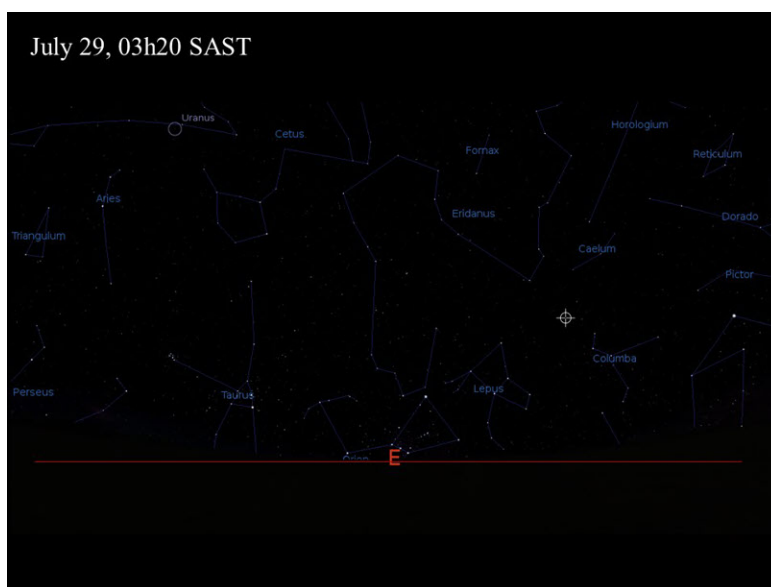


Figure 1 Radiant position of potential omicron Columbids, shown as  $\oplus$   
Diagram courtesy Stellarium

The radiant is located upper right of Lepus and Orion. The bright star Canopus is to the right of the radiant and will be useful to locate the radiant earlier before these prominent constellations become visible. Prospective observers should note that there may be possible concurrent activity from other nearby streams, including the eta Eridanids and July Pheonics. As a result it is essential to plot all observed meteors on the attached gnomonic chart in order to determine the origin and to avoid contamination of potential omicron Columbid rates. Also there are three annual streams which reach their maxima at the end of July. Looking towards East these three, the South delta Aquariids, Piscis Austrinids and alpha Capricornids will appear to radiate from much higher in the sky, and should not cause confusion with potential omicron Columbids. Nevertheless all observed meteors should be plotted. The various radiants are:

Shower	Radiant RA	Radiant Dec	Speed km/s	ZHR
Omicron Columbids	79°	-32°	46	?
Eta Eridanids	45°	-13°	64	<5
July Phoenicids	32°	-48°	47	<5
South delta Aquariids	337°	-16°	41	20
Piscis Austrinids	341°	-26°	35	5
Alpha Capricornids	307°	-08°	22	5

Observations are required starting at 02h00 SAST up to and including 04h00 SAST, and longer if possible, on the morning of Saturday 2017 July 29.

If you wish to participate in this event and need further information please contact the writer, Tim Cooper, email [tpcoope@mweb.co.za](mailto:tpcoope@mweb.co.za)

# GNOMONIC CHART FOR PLOTTING OMICRON COLUMBIDS AND OTHER OBSERVED ACTIVITY

