

THE 2016 QUADRANTIDS

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INTRODUCTION

It is presented a report on the observation of the Quadrantids swarm recorded by RAMBO in the early January 2016.

The data analysis - done by calculating the RZHR (Radar ZHR) - shows the complexity of the swarm, in which it is verified the presence of multiple filaments.

A meteoroids mass profile is also made.

Finally it is made a comparison between the RAMBO radar data and the IMO visual data.

2016 OBSERVATION

The forecast was $\lambda_{\odot} = 283.175$. The phenomenon began in the afternoon of January 3rd, after the radiant point fell up to 10 degrees of elevation. At 6 UT on January 4th there was the peak of activity, at 8 UT the radiant point culminated and at 9 UT and 15 UT there were still two peaks in activity.

DATA ANALYSIS

RZHR highlights more effectively the hourly rate trend corrected for the height of the radiant point and for the sporadic meteors contribution.

The evidence of the complexity is shown by the meteoroids mass profile. Analysis shows the trend of the meteor echoes duration: because the echo duration is proportional to the meteoroid mass, we can obtain an indication on the mass variation. Although data are not related, the trend is perfectly comparable with the hourly rate graphic.

The 2016 Quadrantids recorded by RAMBO has shown **three** peaks: two very close at the solar longitude of 283.12 and 283.19 and a third at 283.45.

The 2015 registration, made with a less reliable version, produced a similar trend: a maximum formed by two closely spaced peaks and another peak after about 8 hours.

A compare between RAMBO data and IMO visual data makes clear that the RAMBO data have the same time pattern.

FUTURE DEVELOPMENT

A visual observation suffers weather conditions, but it comes from a wide coverage in the world.

A radio observation does not depend on weather conditions: for this reason we hope that other similar setups could be installed in order to achieve a global coverage.

RAMBO/METEOR GROUP

The RAMBO/Meteor Research Group has a web site where all info, data and publication are collected. Scan QR-code to visit the web site.



GRAPHICS OF DATA ANALYSIS

