

# A possible new shower on Eridanus-Orion border

Damir Šegon<sup>1,2</sup>, Peter Gural<sup>3</sup>, Željko Andreić<sup>4</sup>, Denis Vida<sup>5,6</sup>, Ivica Skokić<sup>5</sup>,  
Filip Novoselnik<sup>5,6</sup> and Luciano Gržinić<sup>1</sup>

<sup>1</sup> **Astronomical Society Istra Pula, Park Monte Zaro 2, 52100 Pula, Croatia**  
damir.segon@pu.htnet.hr, lgrzinic@inet.hr

<sup>2</sup> **Višnjan Science and Education Center, Istarska 5, 51463 Višnjan, Croatia**  
damir.segon@pu.htnet.hr, lgrzinic@inet.hr

<sup>3</sup> **351 Samantha Drive, Sterling, VA 20164-5539, USA**  
peter.s.gural@saic.com

<sup>4</sup> **University of Zagreb, Faculty of Mining, Geology and Petroleum Engineering,  
Pierottijeva 6, 10000 Zagreb, Croatia**  
zandreic@rgn.hr

<sup>5</sup> **Astronomical Society "Anonymus", B. Radića 34, 31550 Valpovo, Croatia**  
denis.vida@gmail.com, ivica.skokic@gmail.com, filip.novoselnik@gmail.com

<sup>6</sup> **Faculty of Electrical Engineering, University of Osijek, Kneza Trpimira 2B, 31000 Osijek, Croatia**  
denis.vida@gmail.com, filip.novoselnik@gmail.com

Three showers on the border between constellations of Eridanus and Orion were found during extensive search for new showers in SonotaCo and CMN video meteor orbit databases. Our results suggest that two of these three showers represent  $\upsilon$  Eridanids shower (337 NUE), while third one represents separate possible new shower which has been named  $\pi^6$  Orionids (552 PSO).

## 1 Introduction

During the spring of 2013. members of the Croatian Meteor Network did an extensive, automatic D-criterion based search through the SonotaCo and CMN video meteor orbit databases covering years 2009–2011. Briefly, all single meteoroid orbits were compared to all other meteoroid orbits from the database containing more than 133 k of orbits. In cases when there were more than 10 meteoroid orbits satisfying all three D-criteria used, their arithmetic mean orbital parameters were used to start an iterative search through the database, in order to establish if there is a stable, unchanged set of meteoroid orbits. This search yields a high percentage of known showers, but also a quite large number of possible new meteor showers as well. A very interesting case of three, at glance very similar meteor radiant groups was found at the border of the constellations of Eridanus and Orion.

Two of these three showers represent the  $\upsilon$  Eridanids shower (337 NUE). This shower has been discovered by SonotaCo. SonotaCo used the clustering method, which proved the existence of a meteor shower with 29 members. Since SonotaCo hasn't published data on orbital parameters for the  $\upsilon$  Eridanids, we used the mean solar longitude and  $\alpha$ ,  $\delta$ , of the radiant to compare it with our newly found showers. It turned out that two of these three showers represent the  $\upsilon$  Eridanids shower (337 NUE), and that the third one is a possible new shower, which was reported to the IAU MDC and got the name  $\pi^6$  Orionids (552 PSO).

The 552 PSO shower is found to be active from the 29<sup>th</sup> of August to the 18<sup>th</sup> of September, having maximal activity on the 10<sup>th</sup> of September. A search for a possible parent body has been attempted, but none of known NEOs has been found to match either 337 NUE or 552 PSO.

The paper with details on this possible new shower has been submitted to WGN, according to the rules on new showers discoveries (Šegon et al., 2014).

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## References

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