Chi Cygnids - confirmed?

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Introduction

Jenniskens [1] based on observations of the CAMS video meteor network announced detection of activity of a new meteor shower on a short-period orbit. An outburst of 9 meteors on very similar orbits was recorded on September 15th, 2015. The potential new shower Chi Cygnids (#757 CCY) with the mean orbit and radiant position was included in the IAU MDC database, into the 'pro tempore' group.

To derive the characteristics and activity of the announced shower, we searched for the CCY meteors in the EDMOND video database [2], [3]. The mean orbital parameters and radiant position of the core of the CCY were derived by the Welch method [4] for the limiting value of the Southworth and Hawkins D-criterion [5], $D_{SH} = 0.08$. The mean orbit is determined mostly by meteors from 2010 and 2015. A comparison of the derived mean orbit with those obtained by [1] is in Table 1.

Applying differential and cumulative method [6], [7] to the dataset, it was not possible to find a limiting value of D_{SH} for the shower and to determine the CCY period of activity. A graph of the cumulative function N = N(D_{SH}), where N is the number of meteors, for CCY is depicted in Figure 1. No characteristic plateau or decreasing of the growth of the function, similar to the graphs in the paper [8], is seen.

We suppose that the phase space round the CCY is strongly contaminated by the sporadic background meteors. To verify this idea, a more complex study of the background in this area is performed and presented.

 Table 1
 The mean orbital elements of CCY together with

 standard deviations from EDMOND an by Jenniskens [1].

	q	e	i	ω	Ω
EDM	0.948	0.639	17.4	211.4	170.1
±	0.014	0.024	1.2	4.2	4.0
Jenn.	0.949	0.655	18.6	209.9	171.64
±	0.003	0.041	1.6	1.9	0.23



Fig 1 The graph of the function N = N(D), Number – the cumulative number of meteors by increasing values of D_{SH} criterion.

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