

Meteor television observations in Russia

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The meteor television observations are carried out at several Russian observatories. The Institute of Astronomy RAS carries out meteor observations and supports observations by the Geophysical observatory IDG RAS and the Irkutsk State University. Ryazan State University participates in these observations too. Mikhail Maslov takes active part in television meteor observations in Novosibirsk. The results of INASAN observations are presented.

1 Introduction

Meteor observations have as a specific property that we do not know in advance either the area at the celestial sphere, or the time when the event occurs. Besides, a meteor flash in the atmosphere has a duration of few seconds or less. Therefore wide-field view cameras are being used for meteor observations.

2 Meteor TV observations in Russia

The territory of Russia is very extended and the meteor networks are located in different parts of Russia. In *Figure 6* a distribution of the stations is shown on a map of Russia. In the central part of Russia INASAN takes active part in meteor observations (Kartashova, 2013) and supports observations in the East at Irkutsk (Komarova, 2010; Kartashova and Bagrov, 2012). Meteor observations are carried out by Ryazan State University (near Moscow) from two stations (Murtazov, 2011). Meteor observations in Novosibirsk are under supervision of amateur astronomer Mikhail Maslov¹ (IMO code: MASMI). The wide-field of view cameras used for meteor observations in Russia are listed in *Table 1*.

Table 1 – Parameters of the meteor television systems.

Place	Camera	FOV	Lm
		(°)	(mag)
ZO INASAN	WATEC Ultimate (6/0.8)	902H 50x40	+5.0
“ISTRA”	WATEC Ultimate (6/0.8)	902H 50x40	+5.0
IDG RAS	WATEC Ultimate (6/0.8)	902H 50x40	+5.0
RSU-1,2	WATEC Ultimate (6/0.8)	902H 50x40	+5.0
Novosibirsk	WATEC Ultimate (0.8/3.8)	902H 70x93	+3.6
Irkutsk-1,2	WATEC (6/0.8)	902HS 50x40	+5.0

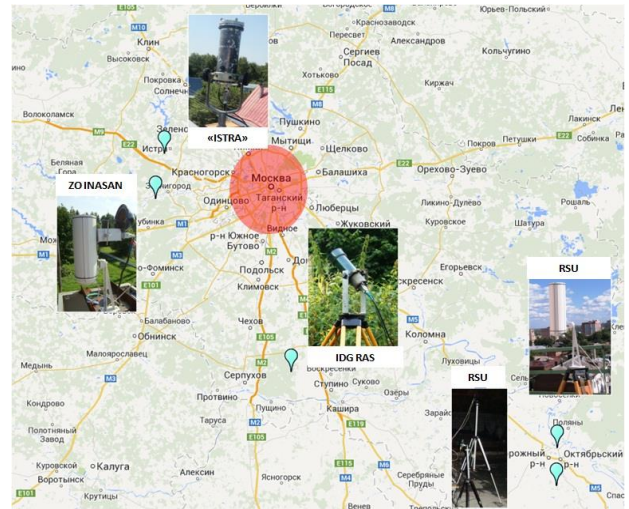


Figure 1 – Locations of video meteor stations in the central part of Russia.

3 Meteor observations INASAN

Institute of Astronomy RAS is one of the science institutes of the Russian Federation providing systematic optical meteor observations and supervises several meteor groups in Russia (Kartashova and Bagrov, 2012).

Double-station observations at INASAN with PatrolCa and MobilCa systems started in 2011 at the Zvenigorod observatory and “Istra” station (Kartashova, 2013). The results of the double-station observations are shown in *Figure 2–3*.

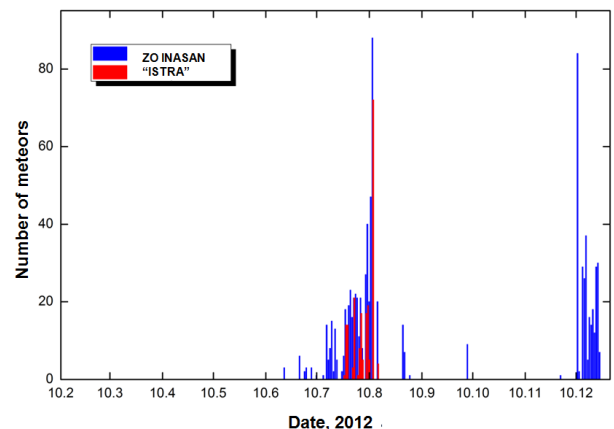


Figure 2 – The distribution of the number of meteors detected at the ZO INASAN and “Istra” in 2012.

¹<http://feraj.narod.ru/>

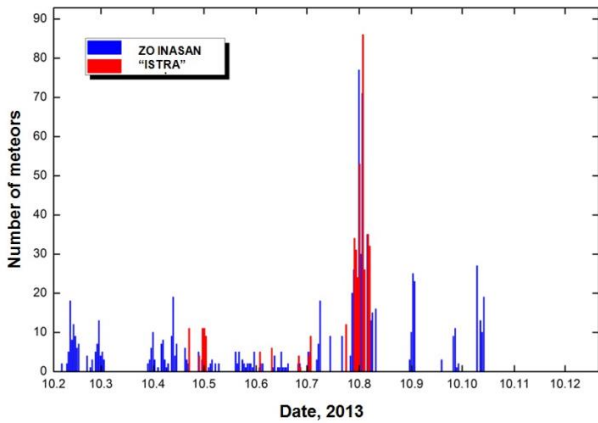


Figure 3 – The distribution of the number of meteors detected at the ZO INASAN and “Istra” in 2013.

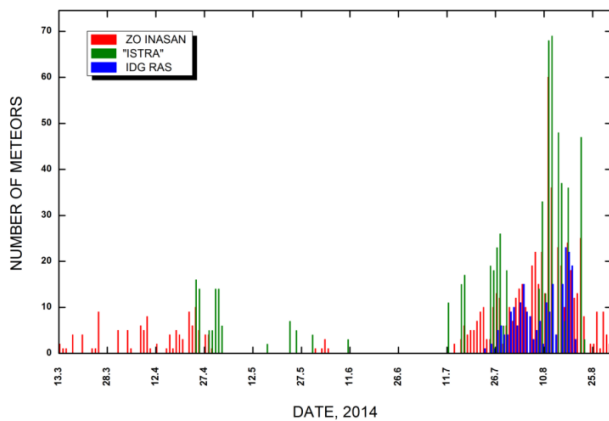


Figure 4 – Results of multi-station observations in 2014 (from tree stations).

station at 18 km from this station (RSU-2) and the Geophysical observatory IDG RAS (GO IDG RAS). The total basis is 240 km. The results of the observations from the ZO INASAN, “Istra” station and GO IDG RAS are presented in *Figure 4*.

The results of observations of tree stations from July 17 until August 30, 2014 are presented in *Figure 5*.

146 double-station meteors were detected for the basis ZO INASAN – “Istra” station and 77 meteors for the basis ZO INASAN – GO IDG RAS. During this year the 22 multi-station meteors (from tree stations) were obtained from July 17 until August 20.

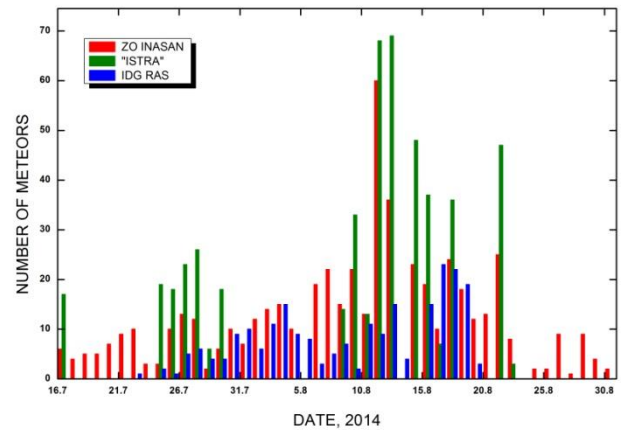


Figure 5 – Results of the multi-station observations of the Perseids activity period 2014 (from free stations).

The weather in the region of Moscow is not very useful for optical observations and we have approximate 120-150 nights (including the nights partly cloudy) per year. The main part of the observations in 2012-2014 was conducted during the summer period (in the period of the Perseid meteor shower activity). The multi - station observations were carried out from 5 stations during this year (*Figure 1*): Zvenigorod observatory (ZO INASAN), “Istra” station, Ryazan State University (RSU) and a

4 Conclusion

The observations are carried out according to the unified methodology in the region of Ryazan, Irkutsk and Moscow which helps to get objective information about meteoroid streams in the Solar System and the influx of meteoroid matter to the Earth. We are planning to continue our observations and to increase the number of cameras as well as the number of stations.

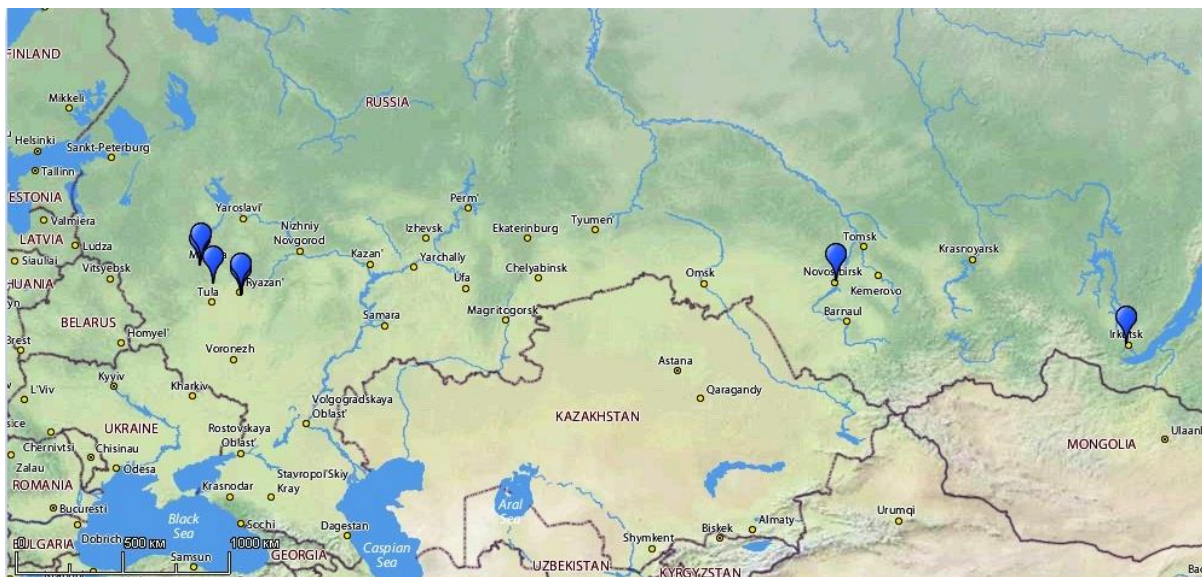


Figure 6 – Locations of television meteor stations in Russia.

Acknowledgment

I would like to thank A. Bagrov, G. Bolgova, A. Murtazov, O. Popova, Yu. Poklad, and Yu. Rybnov for their help with the observations.

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