

Double-station meteor observations by INASAN

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The results of double-station meteor observations by INASAN are presented. The television meteor system PatrolCa (Watec LCL-902HS as camera with a Computar 6/0.8 lens) with a field of view of $50^\circ \times 40^\circ$ and a limiting magnitude (for stars) of $+5.5m$ was used for observations. Double-station observations by INASAN (using the Zvenigorodskaya observatory INASAN and the 20 km distant “Istra” station) started in 2011. Multi-station observations with three stations were carried out in 2014. Over four years about 5000 meteors have been detected.

1 Introduction

The Institute of Astronomy RAS provides systematic optical meteor observations and supervises several meteor groups in Russia (Kartashova, 2013). The meteor observations of INASAN are secured from two locations (Zvenigorodskaya observatory INASAN and the “Istra” station) (Figure 1). The first multi-station observations in Russia (from three stations: ZO INASAN, “Istra” station, Geophysical observatory “Mikhnevo” IDG RAS) were conducted in 2014 (Figure 1).

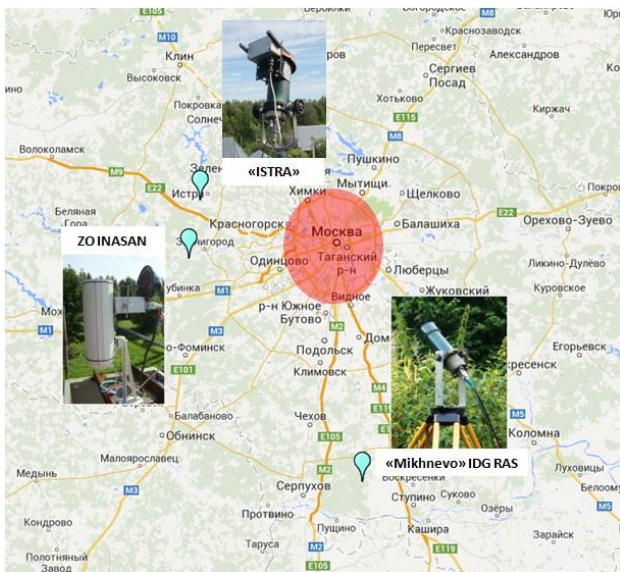


Figure 1 – Locations of the INASAN meteor stations in the central part of Russia.

2 Meteor observations in INASAN

Meteor observations by the PatrolCa cameras in the Institute of Astronomy RAS (INASAN) started in 2011. The first camera at the Zvenigorodskaya Observatory INASAN operates throughout the year (Figure 2). The second camera at the “Istra” station operates during the summer period (Figure 3). Hence most of the double-station observations were obtained during the activity of the Perseid meteor shower (Kartashova and Bolgova, 2015). The results of observations during 2012–2014 are presented in Figures 2–3.

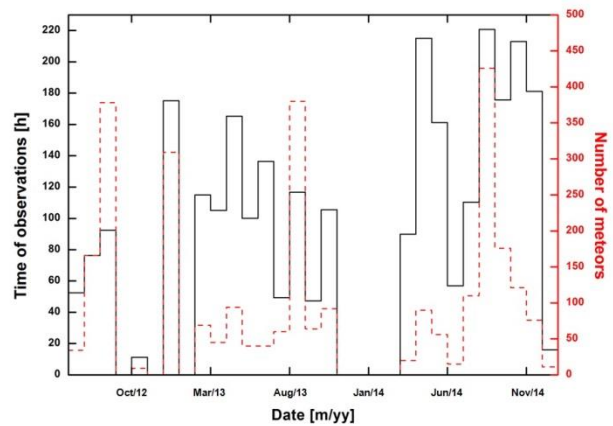


Figure 2 – The distribution of Observing Durations (solid bars) and Meteor Numbers detected at ZO INASAN 2012–2014.

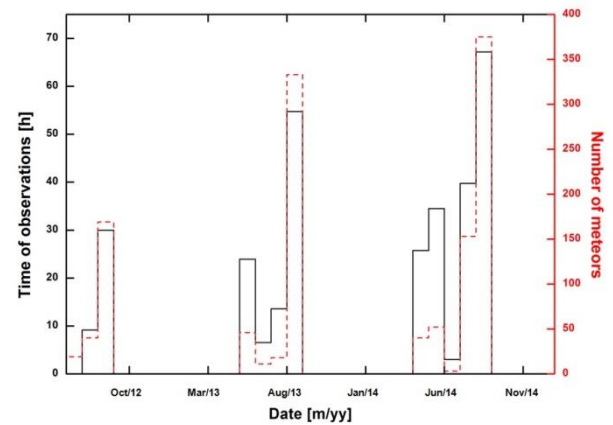


Figure 3 – The distribution of Observing Durations (solid bars) and Meteor Numbers detected at “Istra” station 2012–2014.

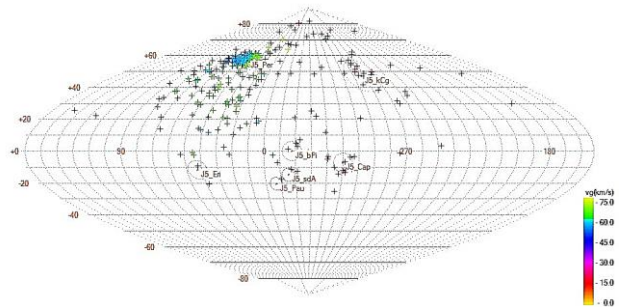


Figure 4 – The distribution of meteor radiants detected by observations during 2012–2014.

During of the observing period 385 radiant were identified. The distribution of the radiant positions is presented in *Figure 4*. We used our data for an analysis of the Perseid meteor shower (Kartashova and Bolgova, 2015).

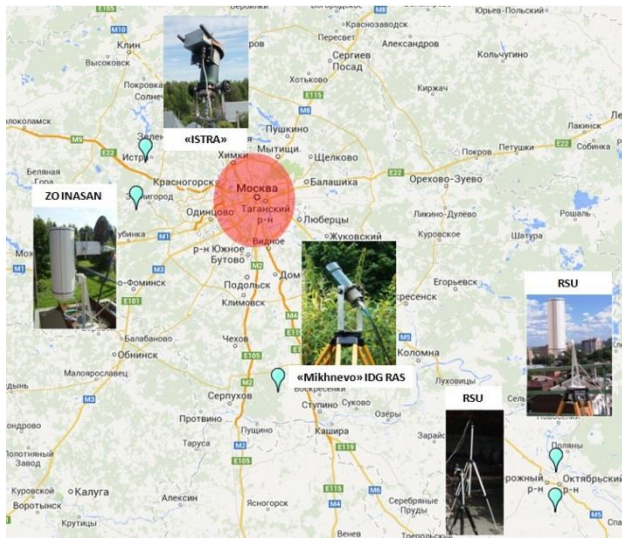


Figure 5 – Locations of television meteor stations in the central part of Russia.

3 Conclusion

The Institute of astronomy RAS is increasing the number of meteor stations step by step. At present 5 stations are active in the central part of Russia (*Figure 5*). In the nearest future all of these cameras will work in the

monitoring mode. The first group should consist of 3 stations: ZO INASAN – “Istra” station – GO “Mikhnevo”. The length of the baseline (from the first to the third station) is 116 km. The second group should have 2 stations: Ryazan State University (RSU) and the “Sazhnevo” station and the length of the baseline will be 18 km. The distance between the “Istra” station and the “Sazhnevo” station is 242 km.

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References

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The author Anna Kartashova (left) and Galina Ryabova (right) (Photo by Axel Haas).