

Meteor observations from double station in Morocco

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We present here a summary description of two first stations dedicated to build the first meteor network in Morocco and the whole African continent. Optimizing the direction of the cameras, in order to conduct permanent meteor observations from double stations, is one of our main goals.

1 Introduction

The monitoring of meteor showers is one of the many aspects of research efforts at the University of Cadi Ayad, Marrakech, Morocco (Rudawska et al. 2011). In this framework, the main purpose of the Oukaïmeden observatory is to monitor the sky and the neighboring environment of the Earth to detect meteors entering the Earth's atmosphere and to determine their trajectories. In Morocco, we have two stations for observations: the first station is installed at Oukaïmeden observatory. The second station is located at AGM observatory (Atlas Golf Marrakech), located 42.38 km south of the observatory (Figure 1, 2 and 3). For meteor observations, we use 2 cameras Watec 902H2 and 2 lenses 6mm/F1.2 (FOV = 60° * 40°) (Figure 4).

Table 1 – Location of the two stations.

	Station 1	Station 2
Longitude	31°12'32" N	31°37'28" N
Latitude	7°52'52" W	7°59'35" W
Altitude	2700m	466m



Figure 2 – AGM observatory.

2 Detections

Direction of the two cameras

At the beginning of the programme, we used random directions for both cameras, but later we started to use the same direction, but slightly shifted. More double detections were obtained.

Now, we are developing a program that computes the exact directions of the cameras. It calculates the coordinates of the center of the region that should be



Figure 1 – Location of the two observation stations



Figure 3 – Oukaïmeden observatory.



Figure 4 – Watec Camera at AGM observatory.

pointed in the sky by the cameras (angular distance, elevation angle, azimuth, declination and right ascension). The program also determines the intersection of the camera fields at a given height and the region of the sky photographed, it optimizes the camera fields and simulates meteor trails for testing purposes (Rendtel and Arlt, 2011).

Results

In August 2014, we observed more than 170 meteor detections from both stations, including double ones, and we are working at their analysis using UfoAnalyzer software. Figure 5 shows the number of meteors detected

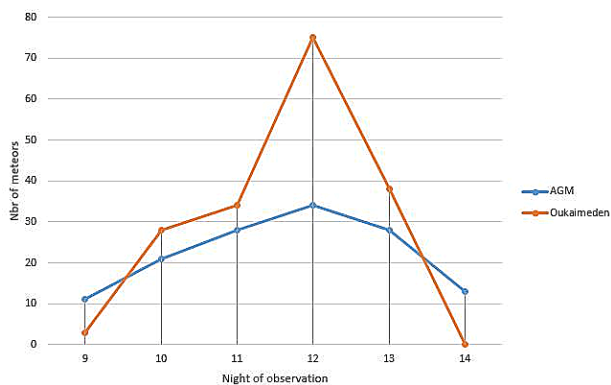


Figure 5 – Number of meteors detected from the night of 9/10 till 14/15 August 2014.

during 6 nights (from 9/10 to 14/15 August 2014). The maximum of detections was obtained during the night of 12/13 August, with 34 meteors for station AGM and 75 meteors for Oukaimeden observatory.

3 Conclusion

Since the detections obtained from the second station are not so clear most of the times, we are considering changing the location and searching for a place located at a higher altitude. If the work goes on very well, we are also talking about having more stations for meteor observations.

The main goal of our future work is to complete the program to calculate the exact direction of the cameras, which also makes the observations, analyzes the captured meteors and determines their trajectories.

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