# Current status of Polish Fireball Network

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## Introduction

Since 2004 the Polish sky has been patrolled by cameras of Polish Fireball Network (PFN). Most of PFN observers are amateurs, members of Comets and Meteors Workshop and perform observations from their homes. Some stations are located in astronomical clubs and schools [1].

## Cameras of PFN

The network consists of 33 continuously working stations with 62 cameras. In Most stations we use sensitive CCTV analog video cameras equipped with lenses with 65.6×49.2° field of view. The Typical resolution is 5'/pixel. Limiting magnitude of the system is +2 magnitude for meteors [1]. We use MetRec [2] and UFOCapture[3] software for meteor detection. RecoStar and UFOAnnalyzer software are used for astrometric reduction of video recordings.

New "Meteor Digital Cameras" (MDC) are based on sensitive DMK 23GX236. This camera have resolution of 1920x1200 pixels. The new cameras are working with lenses with focal length of 2.4 mm which gives 130x80 deg field of view and resolution of 4'/pixel. We working on setup with digital camera for observation of the meteor spectra. For the tests were using Pointgrey and QHY cameras.

Detections from all PFN cameras are automatically transmitted via internet to central server where double station events are detected, analysed and then trajectory and obit is determined. All calculations are checked by manual inspection. We create the PyFN software for trajectory and orbit calculation. PyFN utilize the Celpeha method described in [4].

**Table 1** Results of PFN in last 5 years.

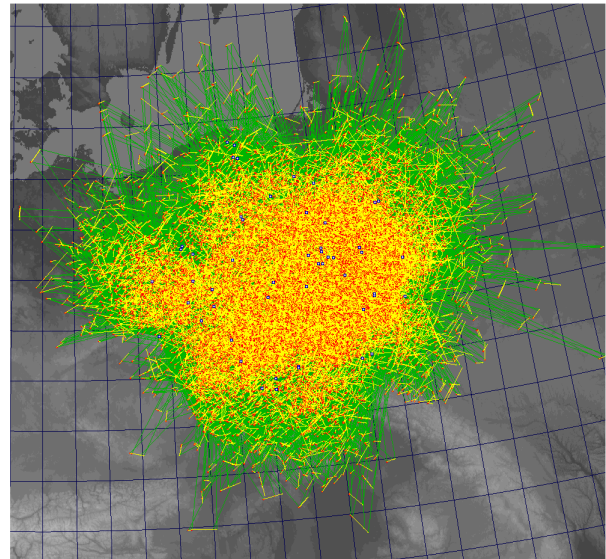| Year | Detections | Orbits |
|------|-----------|--------|
| 2011 | 24099 | 3430 |
| 2012 | 28471 | 4186 |
| 2013 | 36347 | 6114 |
| 2014 | 46936 | 7351 |
| 2015 | 79083 | 13528 |



**Fig 1 Calculated trajectories of meteoroids in 2011-2015**

## Results of PFN in years 2011-2015

In years 2011-2015 PFN cameras recorded 215049 single events. Using this data 34608 trajectories and orbits was calculated and visualized on Fig. 1. Detailed numbers of meteors was presented in Table 1.

## References

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[3] SonotaCo (2005). "UFCaptureV2 Users Manual". http://sonotaco.com/soft/UFO2/help/english/index.html .
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