

# Workshop NAROO-GAIA

20-22 june 2012

# The plate archive of the Sternberg Astronomical Institute

*Emelianov Nikolay*<sup>1,3</sup>

*Kuimov K.V.*<sup>1</sup>

*Samus N.N.*<sup>2</sup>

<sup>1</sup> Sternberg Astronomical Institute,  
Lomonosov Moscow State University, Moscow, Russia

<sup>2</sup> Institute of Astronomy,  
Russian Academy of Sciences, Moscow, Russia

<sup>3</sup> Institut de mécanique céleste et de calcul des éphémérides –  
Observatoire de Paris, Paris, France

# The photographic observations in the Sternberg Astronomical Institute

7 telescopes  
in Moscow and Crimea

Plates made in 1895 – 2004

In total almost 60 000 photographic plates

# The photographic plates in the Sternberg Astronomical Institute, Moscow, Russia

## Plates distribution - telescopes

| D<br>cm | F<br>cm | Field<br>deg | m<br>lim | Years | N. of<br>plates | Site | Identified<br>in ... | Expected<br>prec. | With<br>Planets |
|---------|---------|--------------|----------|-------|-----------------|------|----------------------|-------------------|-----------------|
|---------|---------|--------------|----------|-------|-----------------|------|----------------------|-------------------|-----------------|

variable stars and galaxies:

|    |      |         |    |                   |       |        |          |       |     |
|----|------|---------|----|-------------------|-------|--------|----------|-------|-----|
| 40 | 160  | 10x10   | 18 | 1948-1996         | 21000 | Crimea | in file  | >1.0" | 323 |
| 10 | 64   | 20x28   | 15 | <b>1895</b> -1933 | 1200  | Moscow | in file  | 1.0"  | 10  |
| 16 | 82   | 16x22   | 14 | 1933-1956         | 2500  | Moscow | in file  | 1.0"  | 10  |
| 38 | 640  | 1.4x1.4 | 14 | <b>1902</b> -1972 | 6400  | Moscow | on paper | 0.2"  | ??? |
| 50 | 200  | 3.5x3.5 | 18 | 1958-2004         | 10000 | Crimea | on paper | 0.3"  | ??? |
| 70 | 1050 | 0.6x0.6 | 16 | 1961-1995         | 9500  | Moscow | on paper | 0.2"  | ??? |

Mars, Venus and selected asteroids:

|    |     |     |    |           |      |        |         |      |     |
|----|-----|-----|----|-----------|------|--------|---------|------|-----|
| 23 | 230 | 6x6 | 12 | 1955-1991 | 9000 | Moscow | in file | 0.2" | ??? |
|----|-----|-----|----|-----------|------|--------|---------|------|-----|

In total almost 60 000 photographic plates

9 000 plates - Mars, Venus  
and selected asteroids

51 000 plates - variable stars and galaxies.  
25 000 examined plates only  
on 340 of them the planets were found.  
26 000 plates are to search for planets

Half of the 51 000 plates expected astrometric  
accuracy is of about 0.2 arcseconds  
For other plates the accuracy is not better than  
1 arcsecond of arc.

## The photographic plates in the Sternberg Astronomical Institute

The 9 000 plates may be the subject of a new processing with the new star catalogs after they are scanned.

This work can be undertaken if there is interest in new astrometric data with a modest accuracy for Mars, Venus, and selected asteroids.

On 600 plates the planets with the main satellites may be detected. New processing with the new star catalogs could give new coordinates with an accuracy of about 0.2"

Thank you  
for your attention