

# Photographic Plate Archive in the Astronomical Institute of the Romanian Academy: recent progress

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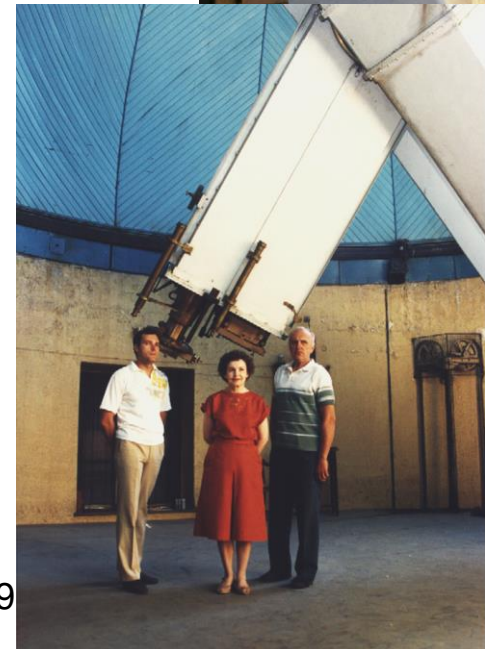
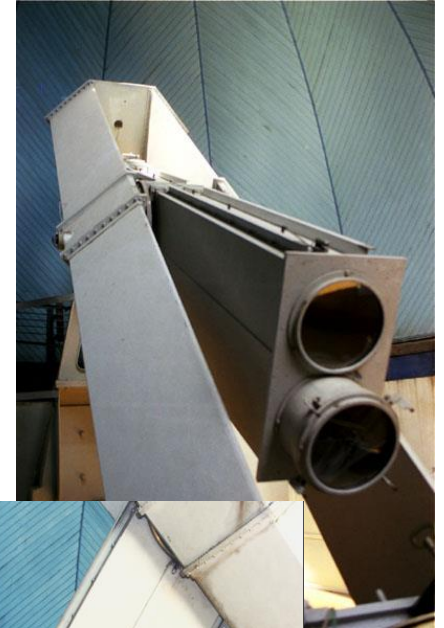
(3)Astronomical Institute of the Romanian Academy, Astronomical Observatory of  
Cluj-Napoca, Romania

# Bucharest Observatory

- Instruments:

Prin-Mertz double refractor (f=6m,  
D=38 cm, FOV= 2x2 deg)

Zeiss Canon camera (f=0.8mm,  
D=16cm, FOV=7x10deg)

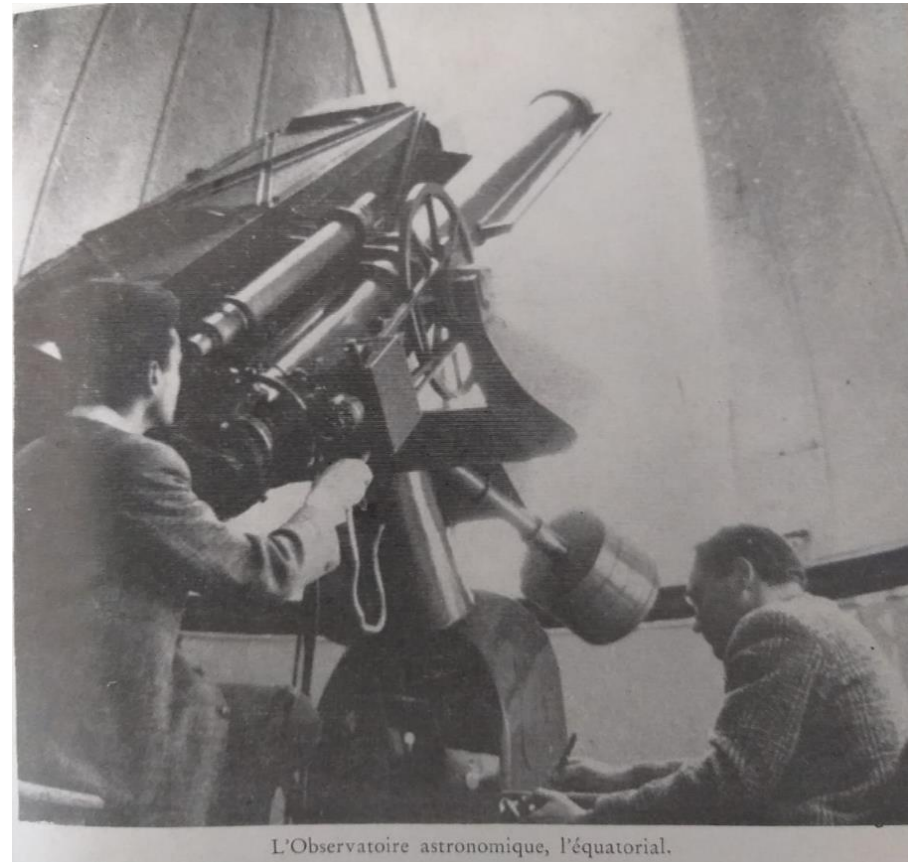


# Cluj Observatory

- Instruments:

Prin refractor ( $f=3\text{m}$ ,  
 $D=20\text{ cm}$ ,  
 $\text{FOV}=2.7\times 2.7\text{deg}$ )

Newton reflector  
( $f=2.5\text{m}$ ,  $D=16\text{cm}$ ,  
 $\text{FOV}=1.7\times 1.7\text{deg}$ )



# ARCHIVE

TABLE 1. WFPDB Bucharest and Cluj archives: main characteristics

WFPDB Ident.*	Original Name	Mirror Diam	Focal Length	Scale arcsec	Type	Field Size	Years of Operation	Number of Plates
BUC016	Zeiss Canon	0.16	0.8	258	Cam	7.4	1930-1961	180
BUC038	Prin-Mertz	0.38	6.0	34	Rfr	2.3	1930-2005	10550
CLU0201	Prin	0.2	3.0	69	Rfr	2.7	1952-1965	744
CLU0202	Prin	0.2	3.0	69	Rfr	2.7	1952-1963	380
CLU0501	Newton	0.5	2.5	82	Rfl	1.7	1952-1974	4501
CLU0502	Newton	0.5	2.5	82	Rfl	1.7	1952-1966	245

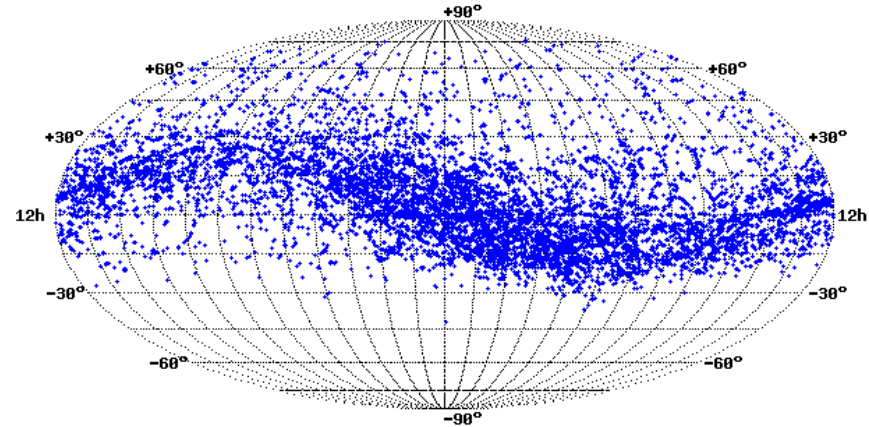
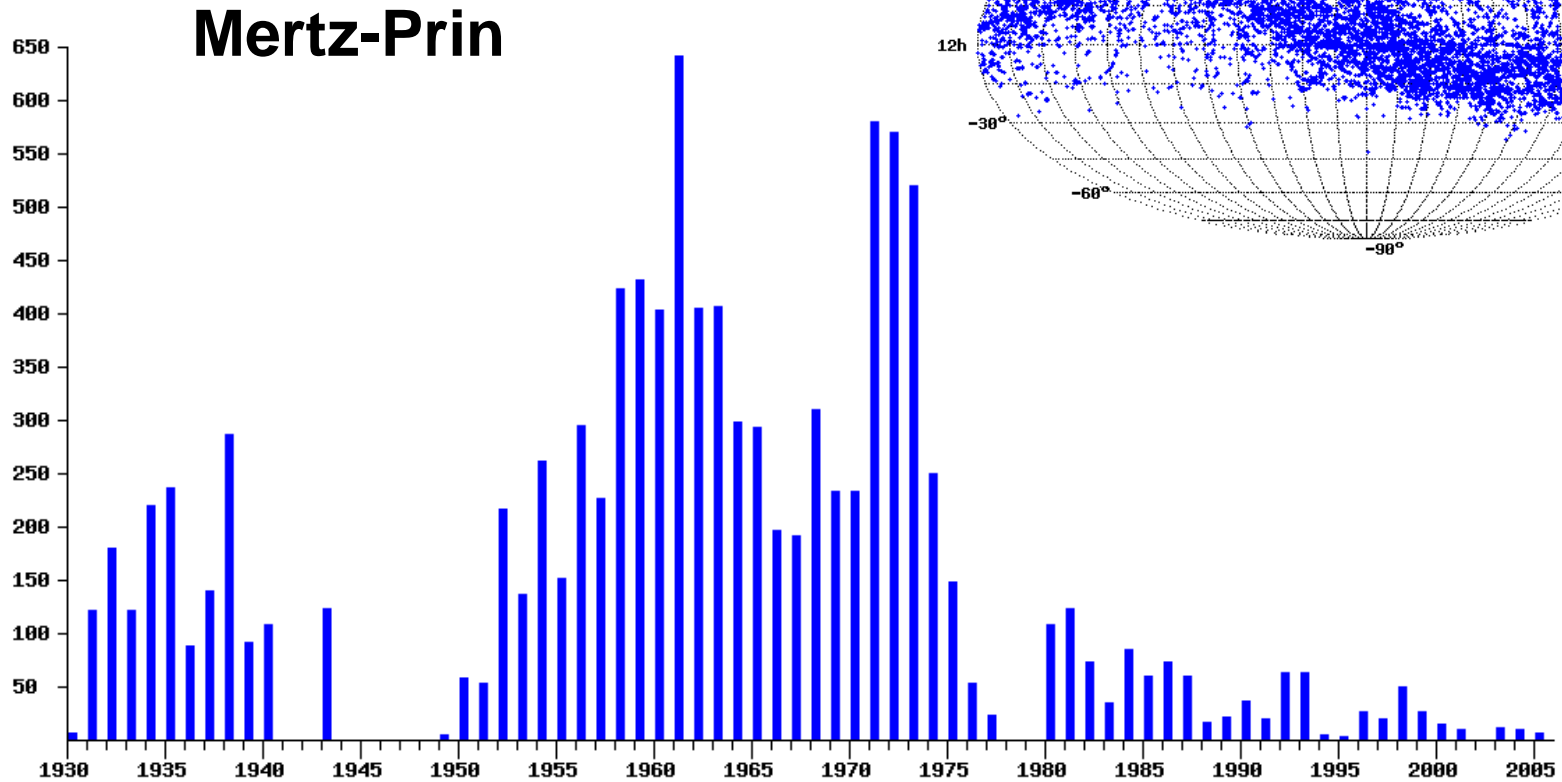
**\*Astrometric plates in the Bucharest and Cluj observatories archives**

Katya Tsvetkova<sup>1</sup> and Petre Popescu<sup>2</sup>

<sup>1</sup>*Institute of Astronomy, BAS, 72 Tsarigradsko shosse blvd, Sofia, Bulgaria*

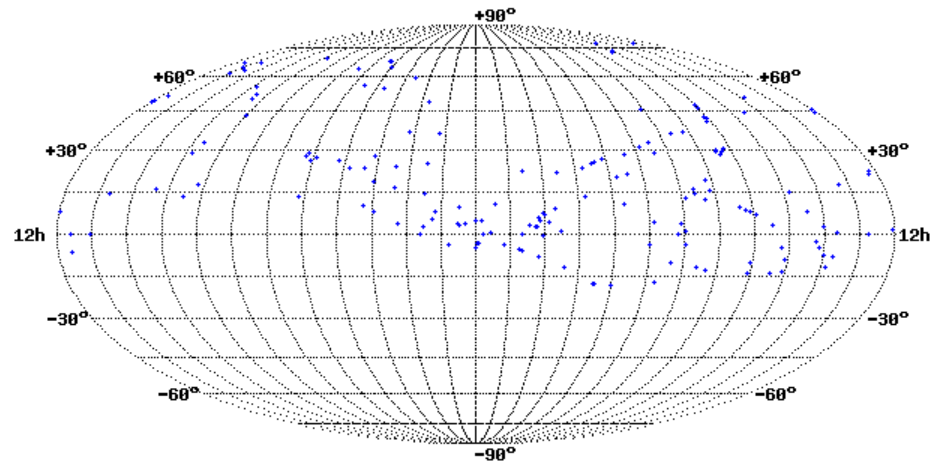
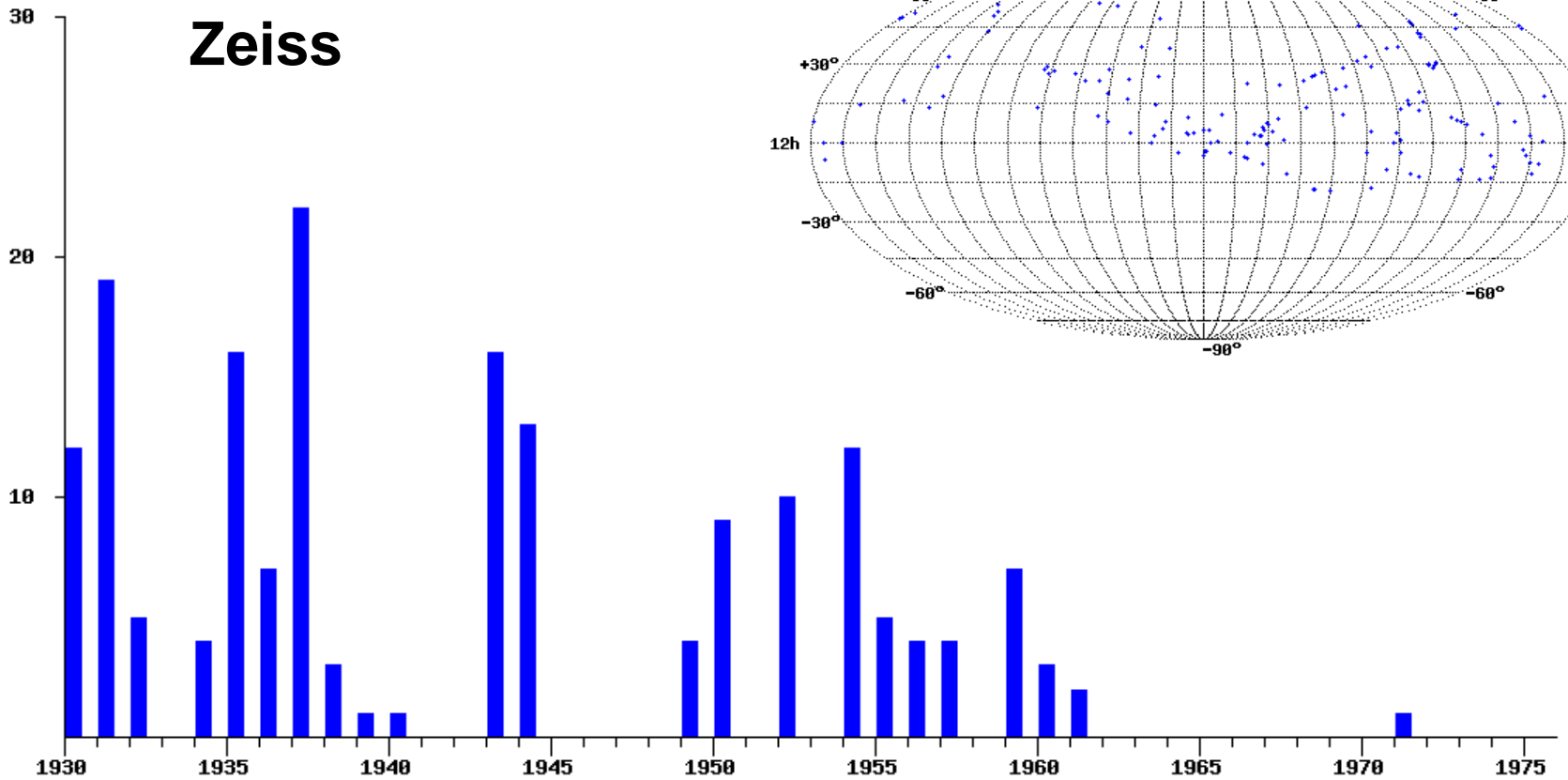
<sup>2</sup>*Astronomical Institute of the Romanian Academy, Str. Cutitul de Argint, nr. 5, sector 4, Bucharest, Romania*

# Bucharest - statistics

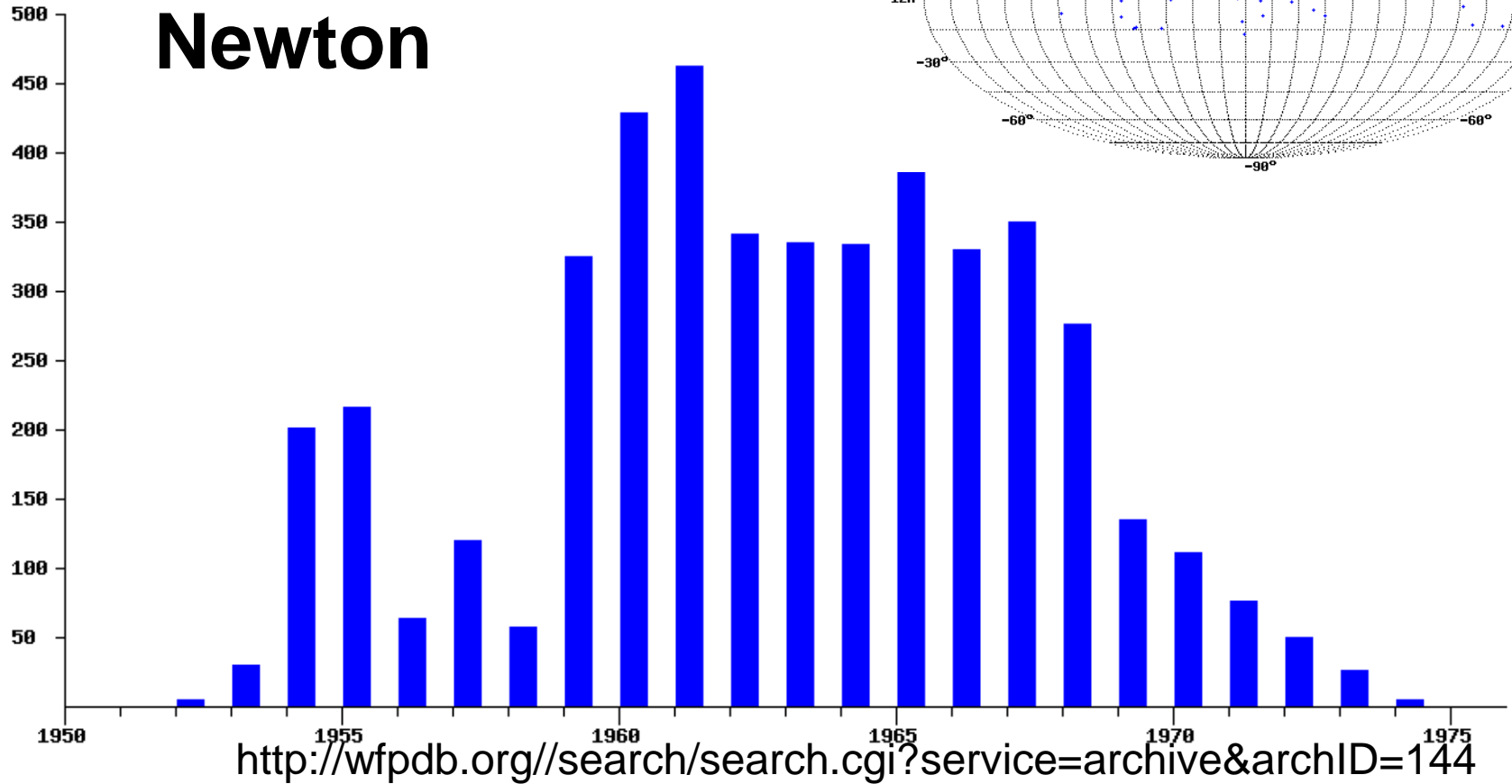
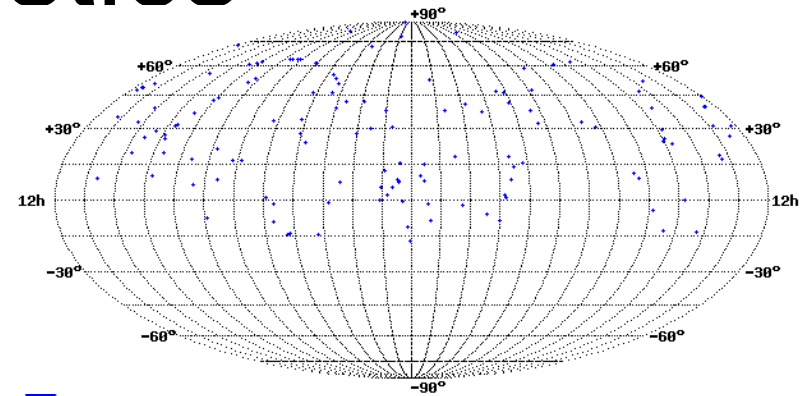


<http://wfpdb.org//search/search.cgi?service=archive&archID=108>

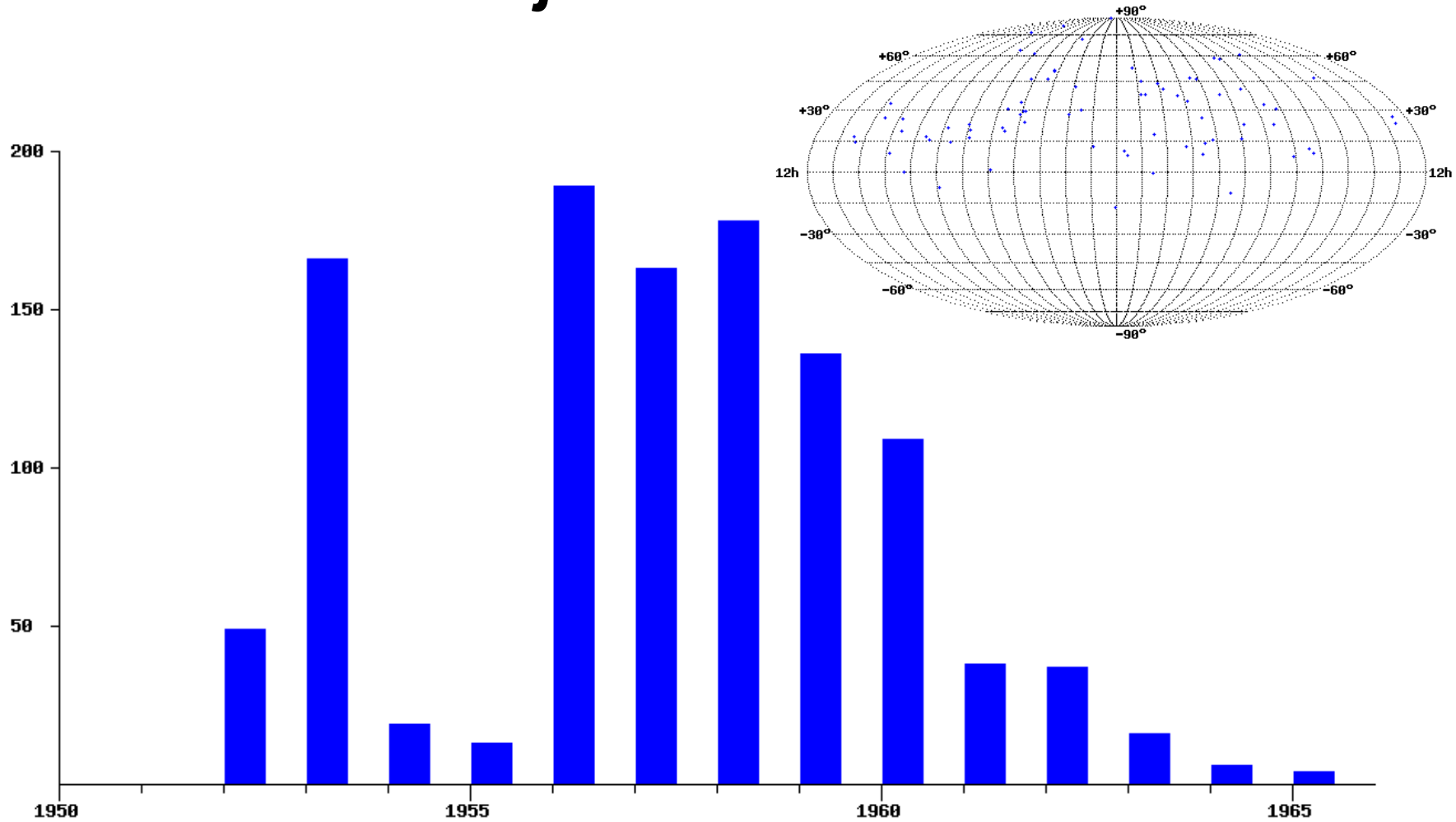
# Bucharest - statistics



# Cluj - statistics



# Cluj- statistics

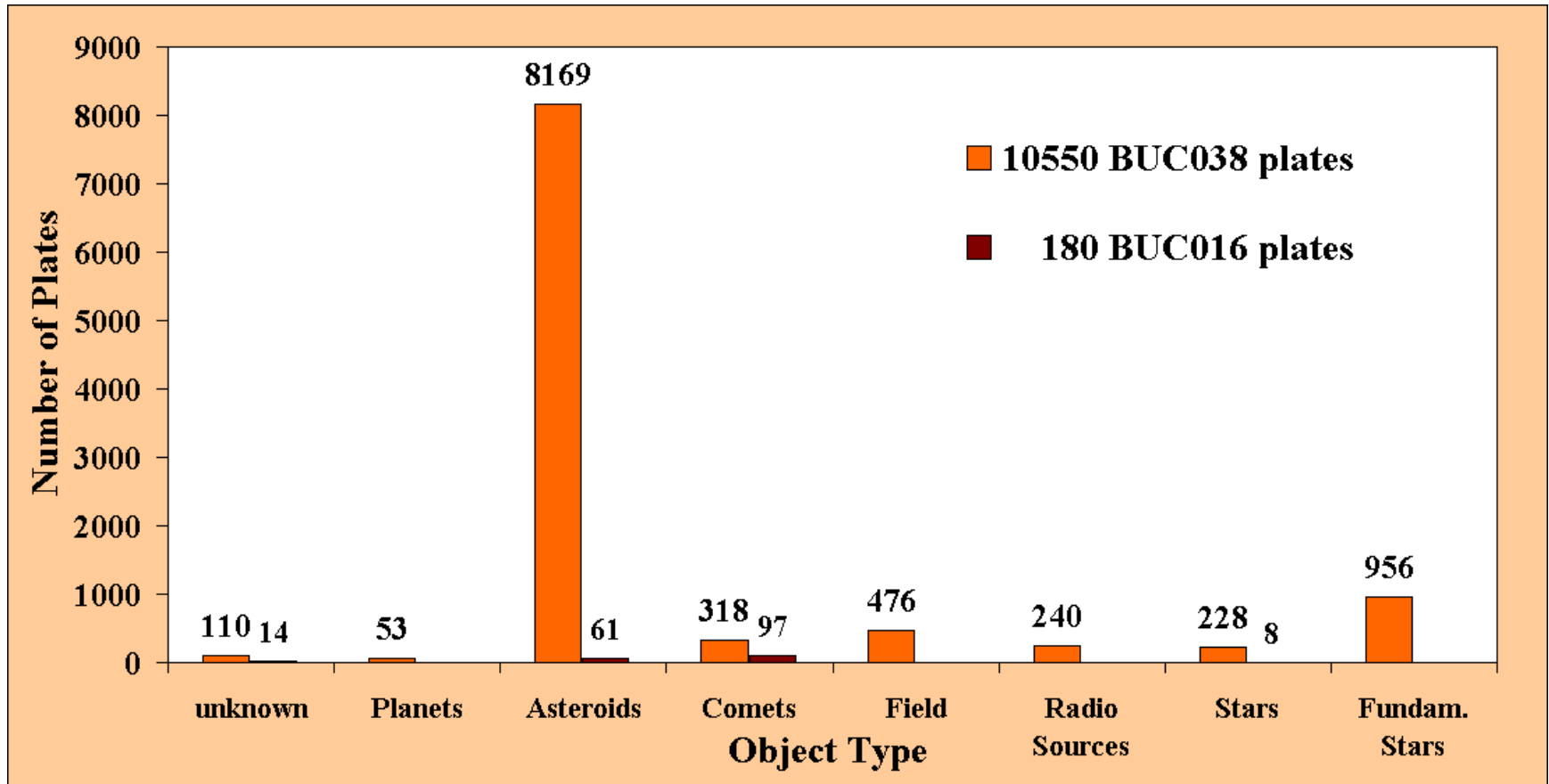




# LEGACY

- **1957 - 2000** - part of the program initiated by the Rechen Institute of Heidelberg and the Institute of Theoretical Astronomy in Leningrad for observations of a number 10-15 big asteroids.
- **1992-2004** - “CONFOR” has as aim to make the connection between radio (VLBI observations) and optical (FK5) reference frames since 1992. 188 stellar areas with radio sources with the declination ranging between  $-20^\circ \leq \delta \leq +70^\circ$  were observed.
- **1952 – 1974** – Photometry of 110 fields of variable stars (eclipsing binaries and RR- Lyrae)
- **1930 – 2004** - Astrometry of planets and their satellites

## Contents of the archives – Bucharest plates\*



\*Astrometric plates in the Bucharest and Cluj observatories archives

Katya Tsvetkova<sup>1</sup> and Petre Popescu<sup>2</sup>

<sup>1</sup>Institute of Astronomy, BAS, 72 Tsarigradsko shosse blvd, Sofia, Bulgaria

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## Contents of the archives\*

**TABLE 2.** Observed minor planets and comets

Catalogue	Minor Planets	Comets
BUC016	78	26
BUC038	772	52
CLU0201	5	1
CLU0202	0	0
CLU0501	10	4
CLU0502	0	2

**TABLE 3.** Plates with images of 2,3,4 observed asteroids

Number of asteroids on the plate	BUC016 plates	BUC038 plates
2	4	321
3	5	64
4	10	19

**TABLE 4.** New comets found on Bucharest plates

Comet Designation	Date of discovery	Magnitude	Discoverer
C/1943 R1(1943II)	1943 09 03	8	Daimaca
C/1943 W1 (1944I)	1944 01 02	9	van Gent-Peltier-Daimaca

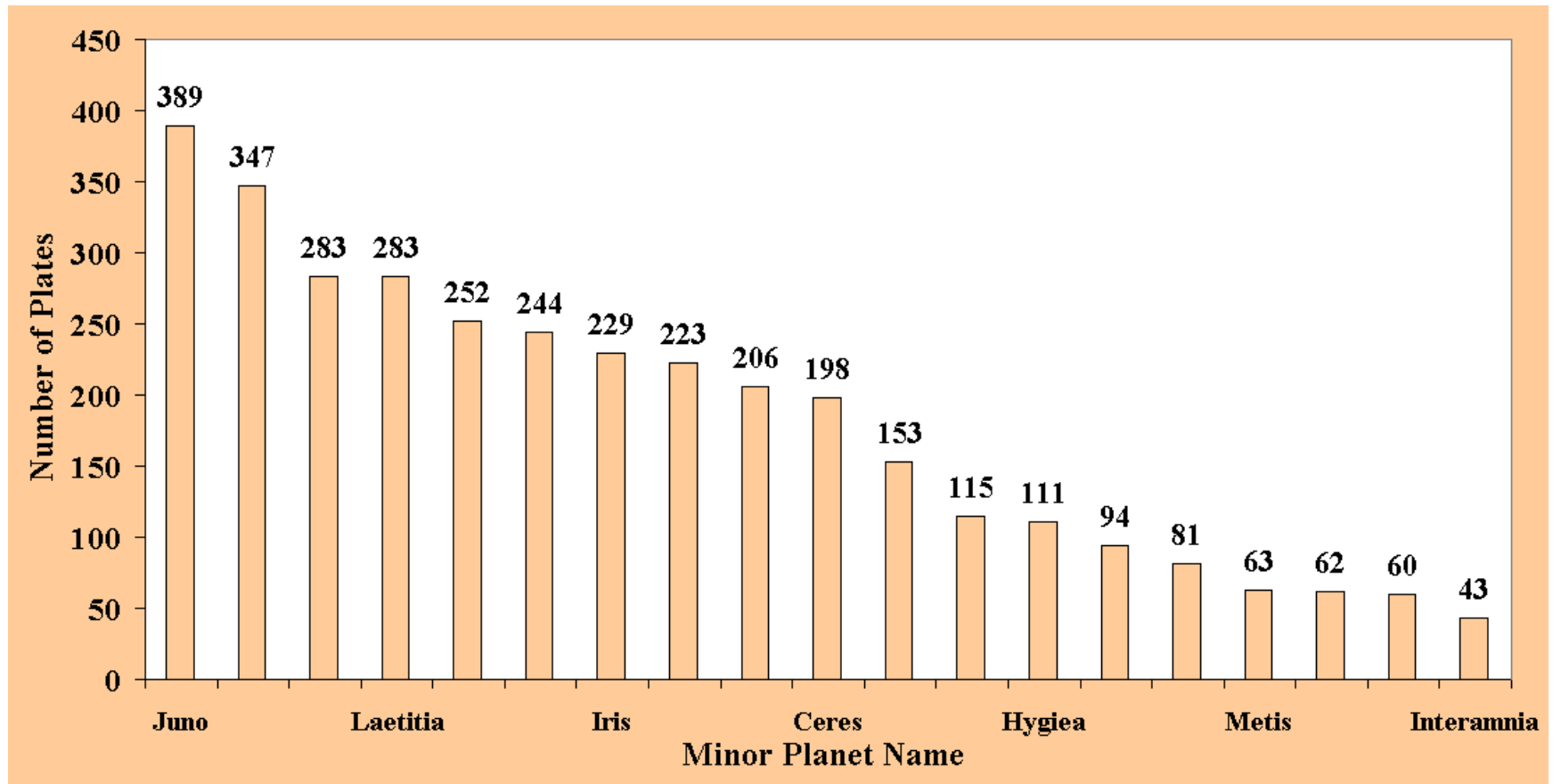
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## Contents of the archives – minor planets\*



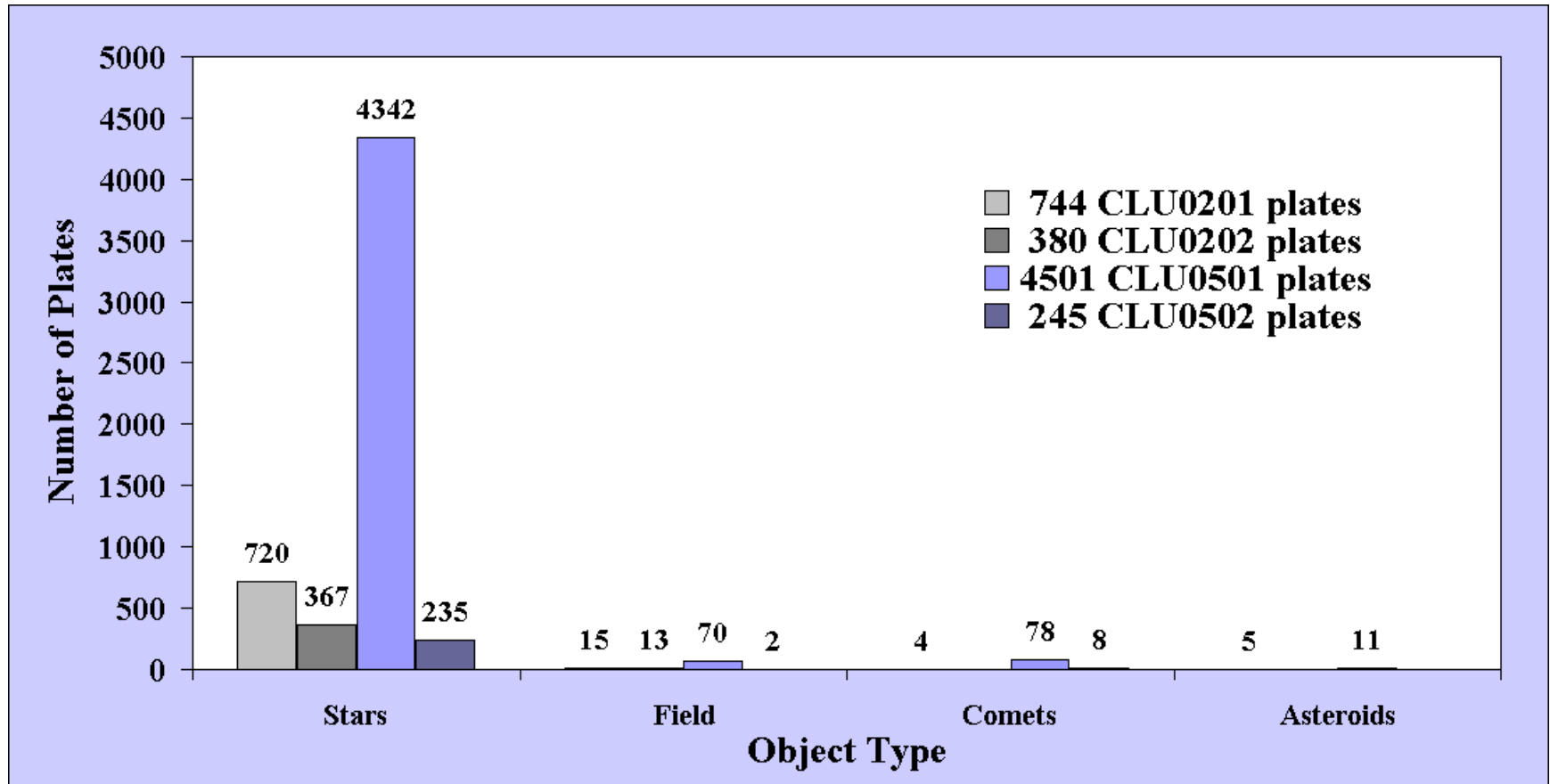
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<sup>2</sup>*Astronomical Institute of the Romanian Academy, Str. Cutitul de Argint, nr. 5, sector 4, Bucharest, Romania*

## Contents of the archives – Cluj-Napoca plates\*



**\*Astrometric plates in the Bucharest and Cluj observatories archives**

Katya Tsvetkova<sup>1</sup> and Petre Popescu<sup>2</sup>

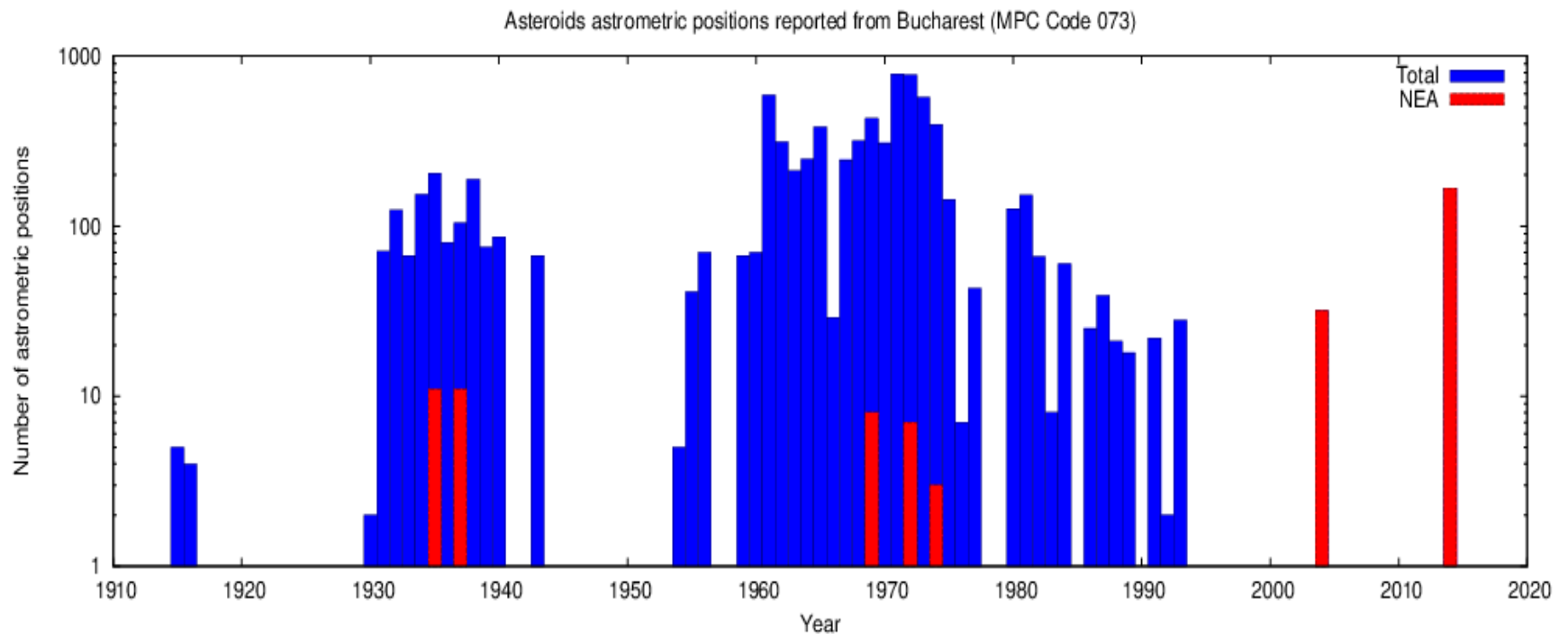
<sup>1</sup>*Institute of Astronomy, BAS. 72 Tsarigradsko shosse blvd, Sofia, Bulgaria*

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## *Un-reduced plates 1931-1933*

- A series of observations were not capitalized, such as a set of minor planets which were observed during 1930-1955.
- The lack of accurate star catalogues containing positions and proper motions, was one of the reasons why the finalization of the reductions was neglected in that period.
- Articles in Romanian Astronomical Journal were published the results of plate processing in the period 1931 - 1933.

# Asteroid Astrometry for IAU073



# UPDATED ARCHIVE

- Bucharest and Cluj observatories archives, are considered as scientific legacy data.
- Efforts providing a **quick access**, online previews, and photometric scans, which will facilitate sharing and reuse of data.
- For quick **plate visualization** and for storage of observer's markers we are preparing plates previews with digital camera in JPEG format with <3MB plate storage.
- Quick visualization using the flatbed **scanner** UMAX Alpha Vista II in TIFF format with 600dpi (45MB) for the **Bucharest plates**
- Quick visualization with 100dpi (220KB in TIFF or GIF format) with HP SCANJET 8200 scanner for the **Cluj plates**. The photometric scans are with resolution 1200 dpi (or about 180MB plate storage) in TIFF format.
- Some of the Bucharest plates have been **scanned** with the EPSON Expression 1640XL of SSADC with resolution 1600 dpi in FITS format (about 460 MB).