Astronomical Photographic Data Archive

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PARI

Not-for-profit Public Foundation

WWW.PARI.EDU

The 80 hectare **Pisgah Astronomical Research Institute** (PARI), Showing the 26m East and 26m West radio telescopes.

PARI Research Building

- 1858 sq meter two story building with labs and offices, houses the Radio Frequency Laboratory, APDA, the Aeronomy Program Center, and lab space for short-term projects conducted by PARI Research Faculty Affiliates.
- Building renovation (NSF ARI-R2 Award AST-0963300) includes temperature (21 +/- 1 ^{0}C) and humidity (40% +/- 5%) controls and stable electrical power (500KW UPS with 500KW diesel backup).
- EMC Corporation donated a 400-terabyte storage system in use in the Research Building and networked through multiple GigaByte connectivity to the Internet.

Astronomical Photographic Data Archive

- APDA is dedicated to the collection, restoration, preservation and storage of astronomical photographic data.
- APDA is tasked with digitizing and establishing a digital image database accessible by the astronomical community via the Internet.
- APDA is essential both for the health of astronomical science and for credibility of the current generation of astronomers as guardians of its unique heritage.
- One of 7 APDA storage rooms is shown to the right.
- Over 220,000 photographs in more than 40 collections are in the APDA library.
- Image date ranges from 1898 HCO All-Sky survey through 1994 CWRU KPNO QSO Survey.

Partial list of APDA collections with > 1,000 plates or films

U of Michigan (0.95m Reflector – slit spectra), CWRU (Burrell-Schmidt 61/91cm), U.S. Naval Observatory (D.C.), CTIO (Curtis-Schmidt 61/91cm), McDonald Observatory (2.1m), Maria Mitchell Observatory, Harvard/Smithsonian Meteor Photographic Survey (Baker Super-Schmidt 21cmm 55^0 FoV), Meteorite Recovery Program (Baker-Nunn), and Mauna Loa Solar Observatory disk and limb images (PMON - Hα filter).

APDA's Unique Value

Photographic collections in APDA are used by professional astronomers, college students, PARI interns, primary and secondary school students, STEM educational and home-school student programs, and citizen science projects such as SCOPE.PARI.EDU.

Surveys in APDA

HK Survey 4-deg prism	AntiCenter Survey 4-deg prism
A-Stars Survey 1.8-deg prism	Weak Metalicity Survey 4-deg prism
He Survey UV filters	6-Degree Survey 6-deg prism
High Luminosity Survey	Low-Z Survey 4-deg prism
IR Survey 4-deg prism	LS1-VI Luminous Stars Survey 1.8-degree prism
Red Survey 4-deg prism	Parallax Survey (non-USNO) Direct images
OB Survey 4-deg prism	SGH (Southern Galactic Hemisphere) Survey 2 or 6 degree prisms
QSO Survey 1.8-deg prism	Henize H-alpha Southern Survey 4-degree prism
SGP Survey 1.8-deg prism	Taurus 6-degree Survey 6-degree prism
NGP Survey 1.8-deg prism	UV-Survey 1.8-degree prism
All-Sky Survey 4-deg prism	Parallax Survey (non-USNO) Direct images
Blue Survey 10-deg prism	

LS1-VI Luminous Stars Survey 1.8-degree prism

SGH (Southern Galactic Hemisphere) Survey 2 or 6 degree prisms

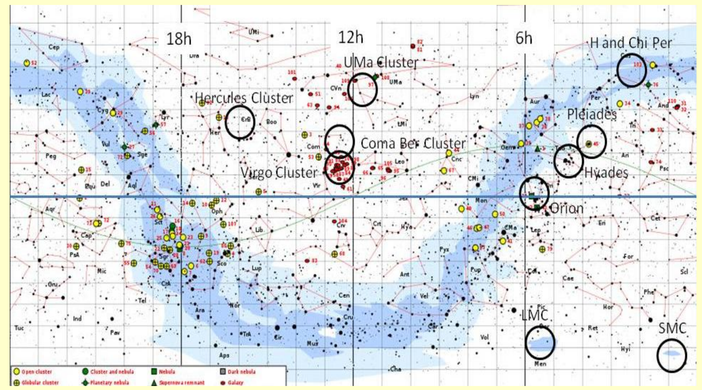
Henize H-alpha Southern Survey 4-degree prism

Taurus 6-degree Survey 6-degree prism

UV-Survey 1.8-degree prism

Fields in APDA

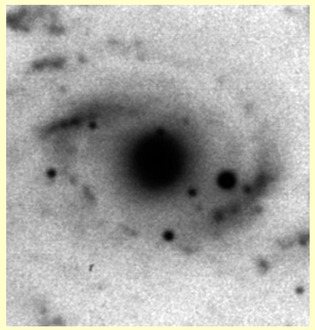
Represented below are several fields with plates taken over long periods of time of open clusters, Messier objects, nebula, and galactic clusters. These surveys include direct and spectral plates.



Barry Lasker Scanning Lab

Updated computer hardware and software controls the GAMMA-II X,Y servo motors; reads the X,Y position of the plate-stage using a laser interferometer (precision of 1μm, a resolution of 0.1μm); and, measures plate density from the output of a PMT through a 15-bit A/D converter.

4mm x 4mm GAMMA II scan of NGC 2207 using 12μm pixels.



4mm x 4mm GAMMA II scan of Allegheny Observatory Plate using 20μm pixels.