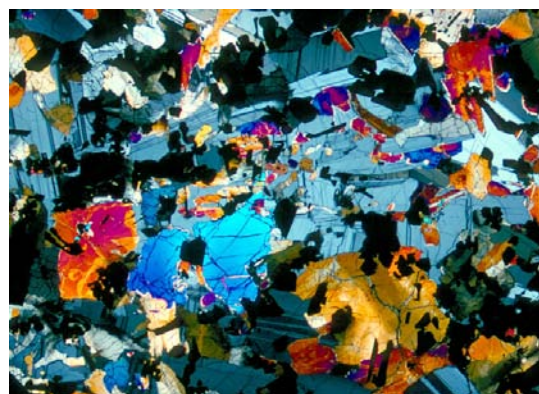


## Lunar and Meteorite Thin Sections for Undergraduate and Graduate Studies

J. Allen<sup>1</sup>, C. Galindo<sup>1</sup>, M. Luckey<sup>2</sup>, J. Reustle<sup>1</sup>, N. Todd<sup>1</sup>, C. Allen<sup>2</sup>, <sup>1</sup>Jacobs Technology, ESCG, P.O. Box 58447, Houston, TX 77258, [Jaclyn.allen-1@nasa.gov](mailto:Jaclyn.allen-1@nasa.gov), <sup>2</sup>NASA JSC Astromaterials Research and Exploration Science, Office of the Curator, NASA/JSC, Mail Code KT, Houston, TX 77058.

### Curation Petrographic Thin Section Program

The Johnson Space Center (JSC) has the unique responsibility to curate NASA's extraterrestrial samples from past and future missions. Curation includes documentation, preservation, preparation, and distribution of samples for research, education, and public outreach. Between 1969 and 1972 six Apollo missions brought back 382 kilograms of lunar rocks, core samples, pebbles, sand and dust from the lunar surface. JSC also curates meteorites collected on US expeditions to Antarctica including rocks from Moon, Mars, and many asteroids including Vesta. Studies of rock and soil samples from the Moon and meteorites continue to yield useful information about the early history of the Moon, the Earth, and the inner solar system.



*Thin section of lunar sample 70017,113  
High-titanium mare basalt viewed with  
polarized light.*

### Lunar and Meteorite Thin Sections for Colleges and Universities

Petrographic Thin Section Packages containing twelve polished thin sections of samples from either the Lunar or Meteorite collections are available for loan. Each set of twelve thin sections of Apollo lunar samples or twelve thin sections of meteorites is available for short-term loan from JSC Curation. The thin sections sets are designed for use in domestic college and university courses in petrology/petrography for advanced geology students. The loan period is very strict and limited to two weeks.

Requestors should contact Ms. Mary Luckey, Education Sample Curator. Email address: [mary.k.luckey@nasa.gov](mailto:mary.k.luckey@nasa.gov)

Each set of slides is accompanied by teaching materials and a sample disk of representative lunar or meteorite samples embedded in acrylic disks suitable for classroom use and. The thin section package is intended for use in college and university courses.

### Lunar Thin Sections

Sample Number	Mission	Rock Classification
12002	Apollo 12	Mare Basalt
12005	Apollo 12	Mare Basalt
77017	Apollo 17	Mare Basalt
74220	Apollo 17	Mare Basalt
60025	Apollo 16	Plutonic
78235	Apollo 17	Plutonic
14305	Apollo 14	Breccia
65015	Apollo 16	Breccia
72275	Apollo 17	Breccia
68501	Apollo 16	Lunar Regolith
70181	Apollo 17	Lunar Regolith
15299	Apollo 15	Lunar Regolith

## Antarctic Meteorite Thin Sections

The following is a list of Antarctic thin section samples. It is important to note that the samples in the various sets are not exactly the same as the ones listed here. This list represents one set of samples.

Sample Number	Rock Classification
ALH 77011	Ordinary Chondrite (Unequilibrated, Type L3)
ALH 81015	Ordinary Chondrite (Equilibrated Type H5)
ALH 84028	Carbonaceous Chondrite (Type CV3)
ALH 83100	Carbonaceous Chondrite (Type CM2)
ALH 81021	Enstatite Chondrite (Type E6)
ALH 84007	Enstatite Achondrite (Aubrite)
PCA 82506	Ureilite (Olivine-Pigeonite Achondrite)
ALH 78040	Polymict eucrite (Feldspar-Pigeonite Basaltic breccia)
EET 79001	Shergottite (Feldspar-Pyroxene Basalt)
RKP 79015	Mesosiderite (Stony-Iron)
ALH 81013	Hexahedrite (Iron)
GIBEON	Octahedrite (Iron)

A key education resource available on the Curation website is *Antarctic Meteorite Teaching Collection: Educational Meteorite Thin Sections*, originally compiled by Bevan French, Glenn McPherson, and Roy Clarke and revised by Kevin Righter in 2010.

## Curation Websites

College and university staff and students are encouraged to access the Lunar Petrographic Thin Section Set Publication and the Meteorite Petrographic Thin Section Package Resource which feature many thin section images and detailed descriptions of the samples, research results.

<http://curator.jsc.nasa.gov/Education/index.cfm>

Information on how to request research samples is on the JSC Curation website: <http://curator.jsc.nasa.gov/>

NASA also has sets of Moon rocks and meteorites to loan for use in domestic classrooms, libraries, museums and planetariums.

[JSC-CURATION-EDUCATION-DISKS@mail.nasa.gov](mailto:JSC-CURATION-EDUCATION-DISKS@mail.nasa.gov)

Please take advantage of the JSC collection of extraterrestrial samples for research, education, and outreach.