

Technical Report 11

MMTO VISITING ASTRONOMER

INFORMATION

January 1982



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I. INTRODUCTION

The contents in this document are in draft form. As the MMTO Visiting Astronomer Program develops, this booklet will be updated to be more complete and correct. We invite suggestions for additions or modifications to the contents. Since the MMT itself, as well as its instruments, are still in a state of major change and final completion, the user will find that sometimes things have evolved from the description given herein. We hope that some of the frustrations which the visitor may experience because of the rapid changes still occurring at the MMT will be fully offset by the quality of the data which he/she will obtain.

II. THE MULTIPLE MIRROR TELESCOPE OBSERVATORY

The Multiple Mirror Telescope Observatory (MMTO) was created by the two owners and sponsors of the MMT - the Smithsonian Institution and the University of Arizona - to operate the MMT. The MMTO is predominantly a service organization being involved in both operation and engineering development of the MMT. At this moment the responsibility for the operations and maintenance of the MMT proper rests with the MMTO. The MMT instrumental attachments are still in a state of development which for all facility instruments (Echelle spectrograph, MMT spectrograph, CCD array and IR Photometer) is ongoing at the two sponsoring observatories (Smithsonian Astrophysical Observatory and University of Arizona Observatories). The visitor to the MMT will therefore interact with both the MMTO staff and with the responsible scientist for each instrument at either SAO or UAO. The responsible scientists are listed in the data sheets for each instrument (section IV), the staff persons with whom the visitor is most likely to have contact are:

| | Telephone | FTS |
|---|--------------|----------|
| Jacques M. Beckers (Director) | 602-626-1812 | 762-6750 |
| J.T. Williams (Asst. Director Operations) | 602-626-4202 | 762-6747 |
| Bobby L. Ulich (Asst. Director Engineering) | 602-626-5415 | 762-6750 |
| Roy Tucker (Instrument Specialist) | 602-626-4202 | 762-6747 |
| Marj Green (Tucson Secretary) | 602-626-1558 | 762-6750 |
| Donna Rakow (MMT Secretary) | 602-626-4202 | 762-6747 |
| Bill Kindred (Senior Telescope Operator) | 602-626-4202 | 762-6747 |
| Sharon Perpignani-Huth (Telescope Operator) | 602-626-4202 | 762-6747 |
| Janet Robertson (Telescope Operator) | 602-626-4202 | 762-6747 |
| David Young (Telescope Operator) | 602-626-4202 | 762-6747 |

III. THE MULTIPLE MIRROR TELESCOPE

The Multiple Mirror Telescope (MMT) was described in detail in a chapter in the Annual Reviews Monograph "Telescopes of the 1980's" (Ed. G. Burbidge) which is available also as MMTO Technical Report No. 9. We refer to that document for the detailed description of both the telescope and its instruments. Below we summarize the parameters of the site and the telescope.

| | | | |
|------------------------|--------------------------------------|-------------------------|--|
| III.1 <u>Site</u> | Latitude: | 31° 49' 19.6" | |
| | Longitude: | 110° 53' 04.4" | |
| | Elevation: | 2600 meters (8585 feet) | |
| | Average Wind Velocity: | 10-15 km/hr | |
| III.2 <u>Telescope</u> | Individual Mirror Diameter: | 182 cm (72 inches) | |
| | Combined Mirror Equivalent Aperture: | 445 cm | |
| | Maximum Edge to Edge Distance: | 690 cm | |
| | Final f ratio individual telescopes: | f/31.6 (f/33.8 for IR) | |
| | Final f ratio combined telescopes: | f/9 | |
| | Image Scale Final Image: | 279 μ m/arc sec | |
| | Typical Seeing: | 1.0 - 1.5 arc sec FWHM | |
| | Best Seeing: | 0.5 arc sec FWHM | |
| | Poor Seeing: | \geq 3 arc sec FWHM | |

| | Telephone | FTS |
|---|--------------|----------|
| Jacques M. Beckers (Director) | 602-621-1812 | 762-6750 |
| J.T. Williams (Asst. Director Operations) | 602-621-7933 | 762-6747 |
| Bobby L. Ulich (Asst. Director Engineering) | 602-621-5415 | 762-6750 |
| Marj Green (Tucson Secretary) | 602-621-1558 | 762-6750 |
| Donna Rakow (MMT Secretary) | 602-621-7922 | 762-6747 |
| Bill Kindred (Senior Telescope Operator) | 602-621-7933 | 762-6747 |
| John McAfee (Telescope Operator) | 602-621-7933 | 762-6747 |
| Janet Robertson (Telescope Operator) | 602-621-7933 | 762-6747 |
| Carol Heller (Telescope Operator) | 602-621-7933 | 762-6747 |

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- III.3 Mount Type: Alt-Azimuth
- Absolute Pointing: 1.5 arc sec RMS
- Tracking: 0.3 arc sec RMS
- Offset Pointing (10^0): 0.3 arc sec RMS
- Wind Buffeting Negligible to 30 km/hr wind
1 arc sec for 50 km/hr wind
- Zenith Avoidance Region: 10 arc minute radius
- Instrument Rotator: Available to correct automatically
for image rotation.
- III.4 Instrument Computer Type: Data General NOVA 800
- Core Size: 32K 16 bit words
- Peripherals: Data General disk drive dual floppy
- Cipher 9 track 800/1600 BPI
- Grinnell Video digitizer (8 bit)
 512 x 512 x 8 bit memory
- Trident T-50 hard disk
- T-43 teletype
- Status monitors
- Graphics Monitor
- Versatek hard copy unit
- Modem (1200 baud)
- 16 12 bit A/D converters
- 4 12 bit D/A converters
- III.5 Top Box Purpose: To provide focal plane viewing system for many instru-
 ments including Echelle Spectrograph, MMT spectrograph
 and CCD camera.
- Detector: Intensified TV Camera with variable field of view and
 scale. Limiting magnitude ~ 19 without video inte-
 gration. Pupil selector can select any of the six
 telescopes.

IV. MMT INSTRUMENTS

At this moment three facility instruments are available to visiting astronomers with a fourth one becoming available sometime in the future:

1. Echelle Spectrograph
2. MMT Spectrograph
3. IR Photometer
4. CCD Camera (not available yet)

These are described in more detail on the following pages.