Observing Instructions
XCOV26 March/April 2008

Target 1: EC14012-1446
RA: 14 03 57 (2000)
DEC: -15 01 10 (2000)
Epoch: 2000
mag=15.6 (mb), 15.5 (mv)

Target 2: PG1159-035
RA : 12 01 46 (2000)
DEC: -03 45 39 (2000)
Epoch: 2000
mag= 14.87 (mb), 14.87 (mv)

Target 3: R808
RA: 16 01 23 (2000)
DEC: +36 48 35 (2000)
Epoch (2000)
mag= 14.2 (mv)

Headquarters:

Headquarters will be staffed continuously starting on April 1 to about April 17. Information on the staff schedule can be found on the XCOV26 website. Headquarters normally runs clock checks, so please be sure to check your clock synchronization throughout the run.

Data Upload:

Data may be uploaded directly to daedalus.physics.udel.edu. A user account has been set up for this purpose, and the password and user name will be distributed shortly. **Please go to /data/incoming**, cd into the directory for your site, make a new directory for your data, and upload your data (raw images) there. We will be receiving data from over 20 different telescopes, so please do not use a different directory. We don't want to miss any data in the rush.

Contact during run:

If any problems arise during the run, please contact any of the following:

Headquarters: 302-654-6407
Judi Provencal email: jlp@udel.edu
Susan Thompson email: sthomp@udel.edu
Harry Shipman email: harrys@udel.edu

Time Check:

Please do a clock check each night before taking data and verify your time. Check your clock visually as often as possible during each observing run. You can check your time against the USNO Java Clock (www.time.gov/timezone.cgi?UTC/s/o/java). If your clock shows a drift during the night, include this information in your observing logs, and send email to one of the contact people so it can be accounted for in the data reduction. Headquarters will also be available for time checks.

CCD Observers:

Normal Calibrations:

Bias: Take approximately 10 bias frames (zero time exposures) at the beginning of each night, and again at the end of the night. We would like to look for drifts in bias during the night due to temperature variations.

DARKS:

Take approximately 10 dark frames at the beginning of each night. The dark frames do not have to match the exposure times of your images. Longer dark frames can give a better idea of the dark count per second and can be scaled to the exposure time of your observations.

FLATS:

Dome flats: If you choose to do dome flats, please take about 50 flat field images per night. Choose an exposure time that fills your CCD to half its saturation level, but is long enough that shutter opening speed is negligible.
Sky Flats: If you take sky flats, take as many as possible in the time you have. Use a high elevation field away from the setting sun. Sky flats are preferable because the light follows the same optical path as starlight.

Target Observations:

1. **Exposure time:**
    a. For large telescopes, choose an exposure time such that the resulting image does not approach the saturation level of your CCD.
    b. It is important that the total cycle time be significantly shorter than the pulsation periods of our targets.
    c. For large telescopes, bear in mind that one goal is to obtain a light curve of very high signal to noise for Mike Montgomery's light curve analysis.
    d. For smaller telescopes, we prefer either 5 or 10 second integrations.
2. **CCD binning**:
    a. If appropriate, bin your CCD to decrease readout time.
    b. Be sure that the star images still fill an adequate number of summed pixels, and there is sufficient area for sky measurements.
    c. Again, it is necessary that the complete cycle time (exposure + readout) be significantly less than the pulsation period of the object.
3. **Filters:**
    a. Where possible, please use the new S8612 filters (or BG40) filter with your CCD.
    b. If neither is available, please use no filter at all. In this case, we will require your CCD's quantum efficiency versus wavelength.

PMT Observers:

PMT observations should follow earlier WET precedence.

1. Integration time:
    1. Where possible, choose a 10 second integration time.
    2. For larger telescopes, bear in mind that one goal is to obtain a light curve of very high signal to noise for Mike Montgomery's light curve analysis.
2. Sky calibrations:

1. Sky calibrations will depend on the PMT instrument.
2. Observers with 3 channel photometers should observe sky in all three channels at the beginning and end of each night. This will allow for cross calibration of the three channels.
3. Observers with 2 channel photometers should observe a comparison star with channel 2, and move the telescope occasionally to observe sky in all channels.
    1. Avoid strictly periodic sky measurements.
    2. Approximately 5 good sky points should be obtained. Long sky observations are not required.
3. Record the aperture size being used, and make notes of any aperture changes during each night.
4. Try to use the same comparison star each night. Record the x and y offsets in your log so we can determine which star you used, if needed.

Data:

Two modes of data transmission will be available. Data may be emailed, or uploaded to the WET computer (Daedalus). Daedalus is currently residing at the University. The IP address is 128.175.112.49. Other details will be distributed before the start of the run.

DATA FORMAT:

We are set up to receive actual images from each site during the run. For CCD observers, we would appreciate if you send us the raw frames, along with your calibration frames.

PMT data should be sent in XQED format. This is considered a last resort for CCD observations. Please consult wet.physics.iastate.edu/Tools/xqed/format.html for details of the XQED format. Don't forget to include your log files, so we know about clouds.

Data File Naming Convention:

Data from various observatories moves between directories and computers quite a bit during a run. To help keep everything organized, we would like to suggest the following data file naming convention. At Mt. Cuba, for example, we will use the following format: "mcao20070902ec14-*.fits". The first 4 letters indicate the observatory, next is the year, month, and day, followed by "ec14" to denote the target. The asterisk will be replaced by numbers corresponding to each exposure.

Here are some observatory designations we used last run:
kpno = Kitt Peak
ctio = Cerro Tololo
lapalma = Roque de los Muchachos
mso = Mt. Stromlo
sso = Siding Spring
mcdo = McDonald
bao = Beijing XingLong Observatory
apo = Apache Point Observatory
lna = Laboratorio Nacional de Astrofisica – Brazil
boao = Bohyunsan Optical Astronomy Observatory
hawa = Hawaii 24 inch
tueb = Tuebingen, Germany

FITS File Format:

The iraf CCD data reduction pipeline required a few keywords. If at all possible, please add the following to your fits headers:

OBSERVAT= observatory identification
RA --- Target RA
DEC --- Target DEC
EPOCH 2000 --- Epoch
EXPTIME = your exposure time