Introduction

Many computer systems are available to Astronomy Department users. This document summarizes the available systems and their intended uses. These system categories are summarized as follows:

1. Machines operated by McDonald staff for general Departmental or Observatory use.
2. Specialized machines operated by individual faculty members, researchers, or staff.
3. UT Information Technology Services facilities.

Personal computers will not in general be covered here, nor will various specialized real time instrumentation computers at Mount Locke. Available networks will, however, be summarized since they are fundamental to overall system use. This document does not yet describe computing at the Hobby-Eberly Telescope, nor does it cover personal workstations at Mt. Locke.

Our general policy is to emphasize accessibility to a broad range of machines, to encourage users to select the most appropriate machine for each specific application. Our networks are configured to encourage this selection by providing maximum system accessibility from each desktop computer connected to the Astronomy Department and McDonald Observatory systems. Note that while the Observatory operates several systems for general use, any given individual may find access to more CPU time and more disk space on one of the private systems.

McDonald/Astronomy Austin Facilities

The following machines are located in the Astronomy Department in Robert Lee Moore Hall, and are operated and managed by McDonald Observatory staff.

1. Astro - Sun Ultra Enterprise 3501 departmental server running Solaris 2.7. This machine has 2 400 Mhz CPUs, 1 Gb of memory, a 21-inch color monitor, 2 high speed fiber channel 18 Gb disks, 4 fiber channel 36 Gb disks, 100 Mbit ethernet, a CD-ROM drive, a 7 Gb capacity 8mm tape drive for general use (nrst5), a 20 Gb capacity 4mm DDS4 tape drive for general use (nrst2), a 20 Gb capacity "Mammoth" 8mm tape drive for backups (nrst4), a 60 Gb capacity "Mammoth2" 8mm tape drive for backups (nrst1), and a 9-track 800/1600/6250 bpi tape drive for accessing old tapes. It serves as the main department mail server, and provides data reduction services for users without adequate access to private workstations. Astro has a 300dpi Apple LaserWriter II NT (laser), access to a 1200dpi Lexmark Optra T 616n laser printer (laser2) and a 1200dpi Lexmark Optra S 2450n laser printer (laser3) for high quality output, and access to an Epson Stylus Pro 5500 ink jet printer for specialty color printing. The department has 6 33.6K dial-in modems (471-6952). The dial-in modems support PPP connections to the department network as well as telnet sessions to Astro. Contact Martha Schaefer for an account on the modem server. Astro can provide access to Astronomy Department, Observatory, University, and wide area networks. A full list of software available on Astro would be too long to include here, so only highlights are mentioned. Standard Sun software includes Solaris 2.7, OpenWindows, and the Sun C, Fortran 77, Fortran 90, and C++ compilers. Data analysis software includes IRAF (Interactive Reduction and Analysis Facility) from NOAO, STSDAS (Space Telescope Science Data Analysis System) from STScI, MIDAS from ESO, Lick Mongo, SuperMongo, and PGPLOT. Commercial software includes IMSL (International Mathematical and Statistical Library), IDL (Interactive Data Language, from Research Systems Inc.), Maple, and Spyglass. TeX/LaTeX, StarOffice, nroff/troff, and Adobe Transcript are the main tools for text processing. Utilities include EMACS, X11R6,
Adobe Acrobat reader, and ghostscript. Most of our application software is organized on network disks, which are mounted remotely from a server and can be accessed by other systems via NFS (Network File System). Software is distributed from Dust (Sun Solaris /opt/local) or Preakness (Redhat Linux 6.2 /opt/local) to other binary compatible machines. Solaris binaries are in /opt/local/bin or /opt/local/X11R6/bin, depending on whether they require X-windows on a graphical display. Redhat binaries are in /opt/local/bin. Astro disk space usage is governed by a quota system, and the scratch areas (/data[1-5]/astro) are purged weekly of files that have not changed in two months. Suitable applications for Astro include code development, data reduction and number crunching, document preparation, electronic mail, printing, and communication with the outside world.

(2) **Echo** - Sun SPARCstation 5 Solaris 2.6 system. This system is essentially an extra head to Astro, but with an independent CPU. Echo has 64 Mb of memory, 17-inch color graphics, an 8mm Exabyte tape drive (/dev/nrst5), a 4mm DDS2 drive (/dev/nrst4), and an internal CD-ROM drive. Note that IRAF networking permits access to the 4mm DAT drive, or any other tape drive, from any machine also running IRAF.

(3) **Juno** - Sun SPARCstation 5 Solaris 2.6 system. This system is another extra head to Astro. Juno has 96 Mb of memory, 17-inch color graphics, and a 9 Gb public disk drive, /data1/juno. A daily cron job removes files from the disk that have not been modified in a week. Please note that this disk is for data reduction only, and all other files may be removed without warning. This 9 Gb disk is also cross mounted to Echo, Vesta, and Ceres. Juno also provides access to the department’s Apple Color LaserWriter 12/600 PS (claser), and HP Color LaserJet 4500 (dw). Please use the color laser printers sparingly, as each plot costs around $1, and we have a limited supply of consumables. In particular, they should not be used as color copiers.

(4) **Vesta** - Sun Ultra 5 Solaris 2.7 system. This system is another extra head to Astro, with a 9 Gb local disk (/data1/vesta) governed by a 1-month purging scheme. Vesta has 128 Mb of memory and a 21-inch monitor.

(5) **Ceres** - Sun Ultra 5 Solaris 2.7 system. This system is another extra head to Astro, with a 9 Gb local disk (/data1/ceres) governed by a 1-month purging scheme. Ceres has 128 Mb of memory and a 21-inch monitor.

(6) **Rolaid** - Sun SPARCstation 5 (clone) Solaris 2.7 system in the Peridier Library, RLM 15.202. This system provides library users with access to online catalogs and the Peridier CD-ROM collection. Rolaid has 64 Mb of memory, 16-inch color graphics, 1.2 Gb of disk space, and an external CD-ROM drive. There is only one user account on Rolaid, "library". The librarian can give out the password. DO NOT USE THIS MACHINE FOR GENERAL COMPUTING. IT IS TO BE USED FOR LIBRARY SEARCHES ONLY. The contents of this account are periodically wiped out, with no advance warning.

(7) **Hyperion** - Sun Ultra 5 Solaris 2.8 system in RLM 15.320E. Hyperion hosts the Department and Observatory web server. It has a 9 Gb disk and 128 Mb of memory. This server contains useful information about the Department and the Observatory. It can be found at URL http://www.as.utexas.edu. There are no private web pages on this server. If you need to put up a web page for a course or something, and you have no other recourse, it is possible to add material to the public server. See Mark Cornell for assistance.

(8) **PCs** - public PCs in RLM 16.304. One Dell Dimension XPS T600r Pentium III machine with a 600Mhz processor (Velma), and two Dell Dimension XPS R450 Pentium II machines with 450Mhz processors (Shaggy and Scooby) are available. Velma has a 17-inch color monitor, a floppy drive, an 10 Gb hard drive, 384 Mb of memory, an internal CD-ROM drive, an internal CD-RW drive, and an internal ZIP cartridge drive. Shaggy and Scooby each have a 17-inch color monitor, a floppy drive, an 8 Gb hard drive, 64 Mb of memory, an internal CD-ROM drive, and an internal ZIP cartridge drive. You may purchase personal ZIP cartridges on a grant number from Mae Collins in 15.320G. THESE MACHINES ARE FOR ASTRONOMY DEPARTMENT USERS AND APPLICATIONS ONLY. Available software applications include Microsoft Office...
2000, Netscape, a Secure Shell client, Adobe Acrobat, a postscript previewer, and Photoshop. Each PC also has the MIX free X server software from MicroImages installed, so that it can act as an X terminal for other department workstations. PLEASE DO NOT INSTALL PERSONAL SOFTWARE ON THE PUBLIC PCs. If you need something installed, see Chris Wilkinson in 15.320H. *Velma* has an HP ScanJet 6200C color scanner and appropriate software for scanning images and OCR. Each PC is connected to the department ethernet, and can access the department printers.

(9) *Macintoshes* - public Macintoshes in RLM 16.304. Two PowerMacs are available: a 500 Mhz G4 Cube with 256 Mb of memory and a 30 Gb disk, and a 7500/100 with 96 Mb of memory. Each has a color monitor, a floppy drive, a large hard drive, an internal CD-ROM drive, and an external ZIP cartridge drive. You may purchase personal ZIP cartridges on a grant number from Mae Collins in 15.320G. THESE MACHINES ARE FOR ASTRONOMY DEPARTMENT USERS AND APPLICATIONS ONLY. Available software applications include Microsoft Office, VersaTerm, Netscape, Fetch, Spyglass, and Photoshop. Each PowerMac also has the X software X server software installed, so that it can act as an X terminal for other department workstations. PLEASE DO NOT INSTALL PERSONAL SOFTWARE ON THE PUBLIC MACS. If you need something installed, see the Mac Manager, Martha Schaefer, in 16.206. Each PowerMac is connected to the department ethernet, and can access the department printers.

Documentation is available in several places. Most of our paper manuals are available for checkout in RLM 15.320. There are some IRAF manuals in 16.304, and various manuals may be borrowed from Martha Schaefer (16.206) or Mark Cornell (17.326). There is considerable online documentation in the form of UNIX man pages (in /usr/share/man, /usr/dt/man, /opt/local/man, and /opt/local/X11R6/man), Sun’s AnswerBook and SunSolve online documentation, and in various Frequently-Asked-Questions (FAQ) files in /opt/local/doc. There is a large amount of useful material available through the University’s web server, at URL http://www.utexas.edu. All of the USENET news groups are available to any workstation over the network from a University news server (newshost.utexas.edu) via the programs rn, trn, xrn, xvnews, or communicator (netscape). These news groups provide interaction with people worldwide on practically any topic. Remote access to the UT library system is available through UTNetCAT at URL http://www.lib.utexas.edu.

**Mount Locke Facilities**

The following machines are located at Mount Locke.

(1) *Oberon* - Sun Ultra 10 Solaris 2.8 system. *Oberon* is used for CCD data acquisition for TK3 and TK4 and quick-look reduction at the 2.7m. *Oberon* currently has 256 Mb of memory, 3 20-inch color display systems, 200 Gb of disk space, high and low density 8mm Exabyte tape drives, a 4mm tape drive, and a CD-ROM drive. *Oberon* mounts *Charon* /opt/local, providing 2.7m users with access to the same reduction and analysis software available in Austin.

(2) *Atlas* - Sun SPARCstation 10 Solaris 2.6 system. *Atlas* is used for CCD data acquisition for the older CCD systems at the 2.7m. *Atlas* currently has 176 Mb of memory, a 17-inch color display, 27 Gb of disk space, high and low density 8mm Exabyte tape drives, a CD-ROM drive, and a Lexmark 1255N laser printer. *Atlas* mounts *Charon* /opt/local, providing 2.7m users with access to the same reduction and analysis software available in Austin. *Atlas* is typically operated remotely from *Oberon*.

(3) *Charon* - Sun Ultra 5 Solaris 2.6 system. *Charon* is used as a second seat in the 2.7m control room, and as an extra head to *Oberon*. *Charon* has 128 Mb of memory, a 9 Gb disk, and 19-inch color graphics. *Charon* mirrors *Dust* /opt/local, providing mountain users with access to the latest Solaris versions of all reduction and analysis software.

(4) *Mimas* - Sun SPARCstation 5 Solaris 2.6 system. *Mimas* controls the 2.7m autoguiders, and is also used as an additional seat in the 2.7m control room, and as an extra head to *Oberon*. *Mimas*
has 192 Mb of memory, and 17-inch color graphics. Mimas mounts Charon /opt/local, providing 2.7m users with access to the same reduction and analysis software available in Austin.

5) Colossus - 400 Mhz AMD K6-2 PC running the real time UNIX LynxOs 2.4. Colossus is a rack mounted PC in the old Cass control room. It serves as the high level interface to the new 2.7m control system.

6) Guardian - PC running Linux. Guardian is a rack mounted PC in the old Cass control room. It serves as the controller for the 2.7m dome automation system.

7) Nereid - Sun Ultra 10 Solaris 2.8 system. Nereid is used for CCD data acquisition for TK4 and quick-look reduction at the 2.1m. Nereid currently has 256 Mb of memory, 2 20-inch color display systems, and 130 Gb of disk space. Nereid mounts Charon /opt/local, providing 2.1m users with access to the same reduction and analysis software available in Austin.

8) Miranda - Sun SPARCstation 10 Solaris 2.6 system. Miranda is used for CCD data acquisition for the older CCD systems at the 2.1m. Miranda currently has 64 Mb of memory, 19-inch color graphics, 10 Gb of disk space, and an 8mm Exabyte tape drive. Miranda mounts Charon /opt/local, providing 2.1m users with access to the same reduction and analysis software available in Austin. Miranda is typically operated remotely from Nereid.

9) Dione - Sun SPARCstation 5 Solaris 2.6 system. Dione is used for CCD data acquisition and quick-look reduction at the 0.9m. Dione has 32 Mb of memory, 17-inch color graphics, 2.5 Gb of disk space, and an 8mm Exabyte tape drive. Dione mounts Charon /opt/local, providing 0.9m users with access to the same reduction and analysis software available in Austin.

10) Titan - Sun SPARCstation 20 Solaris 2.6 system. Titan is used for CCD data acquisition and quick-look reduction at the 0.8m. Titan currently has 96 Mb of memory, 2 20-inch color graphic systems, 80 Gb of disk space, two CD-ROM drives, a 4mm DAT drive, and an 8mm Exabyte tape drive. Titan mounts Charon /local, providing 0.8m users with access to the same reduction and analysis software available in Austin.

11) Phoenix - Sun SPARCstation IPX Solaris 2.6 system in the 2.7m computer room. Phoenix is used primarily by the mountain staff for development and testing, but is available to visiting astronomers on an as-is basis. Phoenix has 32 Mb of memory, 16-inch color graphics, and 2 Gb of disk space.

12) Miscellaneous dedicated systems - There are various dedicated real time computers at McDonald. Some of these are supported by McDonald staff, and some by specific faculty, PIs, or non-McDonald staff. Most are dedicated to supporting specific instrumentation and control projects. Consult the appropriate people for details.

**Individual Networked Workstations or Multi-User Systems**

The following machines are located in Austin in RLM Hall, and are operated and maintained by specific individuals or research groups, and/or their staff and students. This list rapidly changes and is bound to become obsolete soon, but the following is current as of 27 August 2002. The list contains only multi-user systems and named workstations which are connected to the Astronomy Department Ethernet; Macintoshes and PCs are not included. For an up-to-date list of all machines on the Astronomy Ethernet, see the /etc/hosts file on Astro. My apologies for any mistakes in this list. Please notify me about errors and omissions.

1) alexis - Jos Tomkin, RLM 16.306, Sun Sparcstation 5
2) anchor - David Lambert, RLM 16.320, Sun Sparcstation 2
3) aries - Robert Hynes, RLM 17.340, Sun Ultra 1
4) barney - Barbara McArthur, RLM 16.232, Sun Ultra 10
5  barolo  - Anita Cochran, RLM 16.338, Sun Ultra 2
6  bellini  - Eric Hooper, RLM 16.214, Sun Sparcstation 5
7  bento  - Gary Hill, RLM 17.320, Sun Ultra 1
8  bessel  - Barbara McArthur, RLM 16.306, Sun Sparcstation 20
9  billybob  - Neal Evans, RLM 17.306, Sun Blade 100
10 bliss  - Chris Sneden, RLM 15.310A, Sun Sparcstation 5
11 bluebump  - Greg Shields, RLM 15.224, Sun Ultra 5
12 bubba  - Neal Evans, RLM 17.344, Sun Blade 100
13 bucephalus  - Chris Wilkinson, RLM 15.320H, Sun Sparcstation 5
14 bullwinkle  - Ed Nather, RLM 17.310, Sun Ultra 5
15 carina  - Phillip MacQueen, RLM 17.336, Sun Ultra 1
16 chandra  - John Kormendy, RLM 15.324, Sun Ultra 60
17 chondrite  - Bill Spiesman, RLM 17.202, Sun Ultra 5
18 circe  - Department Visitors, RLM 16.218, Sun Ultra 5
19 clyde  - Fritz Benedict, RLM 16.232, Sun Sparcstation 10
20 cobalt  - Brad Behr, RLM 17.212, Sun Ultra 5
21 crown  - David Lambert, RLM 16.316A, Sun Sparcstation 2
22 crux  - Phillip MacQueen, RLM 17.336, Sun Sparcstation 10
23 danny  - John Lacy, RLM 16.334, Sun Sparcstation IPX
24 denali  - Jasmina Marsh, RLM 17.222, Sun Sparcstation 5
25 dust  - Mark Cornell, RLM 15.320J, Sun Ultra 5
26 galileo  - Paul Shapiro, RLM 16.302, Sun Sparcstation 5
27 gandhi  - Gajendra Pandey, RLM 16.314, Sun Ultra 5
28 gohan  - Gary Hill, RLM 17.328, Sun Ultra 10
29 grendel  - Mark Cornell, RLM 15.320J, Sun Sparcstation 10
30 hal  - Paul Harvey, RLM 16.226, Sun Sparcstation 1
31 hashi  - Marcel Bergmann, RLM 17.342, Sun Sparcstation 10
32 hebe  - Carlos Allende Prieto, RLM 16.214, Sun Ultra 5
33 katmai  - Ted von Hippel, RLM 16.224, Sun Ultra 5
34 joebob  - Neal Evans, RLM 17.306, Sun Blade 100
35 louann  - Neal Evans, RLM 17.306, Sun Blade 100
36 marple  - Dan Lester, RLM 16.340, Sun Sparcstation 10
37 maxwell  - Verne Smith, RLM 16.314, Sun Sparcstation 2
38 moonshine  - Nairn Baliber, RLM 16.216, Sun Sparcstation 5
39 nene  - John Lacy, RLM 16.334, Sun Sparcstation 5
40 oldbull  - Ed Nather, RLM 17.310, Sun Sparcstation 2
41 pan  - Bev Wills, RLM 17.324, Sun Ultra 2
42 pancake  - Michael Yuan, RLM 17.304, Sun Ultra 5
43 panic  - Bev Wills, RLM 17.310, Sun Sparcstation LX
pecos - Ed Barker, RLM 15.222, Sun Ultra 1
peggysue - Neal Evans, RLM 17.306, Sun Blade 100
pisces - Rob Robinson, RLM 17.318, Sun Ultra 5
poirot - Harriet Dinerstein, RLM 16.324, Sun Ultra 5
puck - Mark Cornell, RLM 17.326, Sun Ultra 5
pucktng - Robin Anderson, RLM 15.320A, Sun Sparcstation 4
rhea - Mark Cornell, RLM 15.320J, Sun Sparcstation 5
sagredo - Paul Shapiro, RLM 16.302, Sun Ultra 10
salviati - Paul Shapiro, RLM 16.302, Sun Ultra 10
shaka - Eswar Reddy, RLM 16.316A, Sun Ultra 5
shiraz - Bill Cochran, RLM 16.342, Sun Ultra 60
shrub - John Lacy, RLM 16.334, Sun Ultra 5
simplicio - Hugo Martel, RLM 16.202, Sun Sparcstation 10
solomon - Robert Duncan, RLM 17.328, Sun Sparcstation 5
spitzer - John Kormendy, RLM 13.120, Sun Ultra 5
stimp - Ed Nather, RLM 17.322, Sun Sparcstation IPX
stryder - Pamela Gay, RLM 13.134, Sun Sparcstation 2
sun - Larry Trafton, RLM 16.326, Sun Ultra 5
syrtis - Martha Schaefer, RLM 16.206, Sun Ultra 10
tao - Craig Wheeler, RLM 15.202A, Sun Ultra 1
topcat - Sam Odoms, RLM 15.320F, Sun Sparcstation 5
torricelli - Paul Shapiro, RLM 16.302, Sun Ultra 5
tucana - Phillip MacQueen, RLM 17.336, Sun Ultra 10
tui - Phillip MacQueen, RLM 17.334, Sun Ultra 10
viking - Nils Ryde, RLM 16.218, Sun Sparcstation 4
wairau - Phillip MacQueen, RLM 17.342, Sun Sparcstation 2
zeke - Paul Harvey, RLM 16.226, Sun Sparcstation 20
zen - Paul Harvey, RLM 16.226, Sun Ultra 1
zinfandel - Anita Cochran, RLM 16.322A, Sun Sparcstation 10
zircon - Harriet Dinerstein, RLM 16.212, Sun Sparcstation 5
zoe - Paul Harvey, RLM 16.230, Sun Ultra 10
zorba - Diane Paulson, RLM 16.220, Sun Ultra 30

UT Information Technology Services

UT Austin’s Information Technology Services (formerly known as "Academic Computing and Instructional Technology Services") operates a variety of machines. Please consult the web at http://www.utexas.edu/cc/hardware for a current description of available systems, and http://www.utexas.edu/computer for a list of campus computing organizations. New Astronomy Department users may wish read "IT@UT" at http://www.utexas.edu/computer/news for the latest information
on computing around campus. Contact the Help Desk (475-9400) for specific information about their systems, service, software, and so on. There are a large number of useful documents, pamphlets, and handouts available in WCH 1.104, for example. The University Co-Op Bookstore sells some Comp Center literature. The "Introduction to UNIX" booklet is particularly useful. ACITS also operates a Software Distribution Service for obtaining commonly used software for various popular machines, e.g. Macs, PCs, DEC systems, Sun workstations, and IBM workstations. Astronomy Department users with their own systems will find this service convenient and cost effective. The Comp Center also maintains a bank of thousands of modems ("UT Telesys") with SLIP and PPP support, permitting remote access via TCP/IP networking from home, allowing use of X-windows, etc., over phone lines. The modem number is 475-9996, but costs about $110/year currently. See Mae Collins in RLM 15.320G to sign up for this service. You will need a university account number for the yearly fee.

In general, the following hardware was available, as of 26 August 2002:

1. **Unix Systems** - these include UTS (2 DEC AlphaServers running Digital UNIX), CCWF (SPARCenter 2000 running Solaris), and the IBM Academic Data Server (ADS, IBM Model R40 running AIX).

2. **VMS Systems** - the Comp Center VMS Cluster including 3 AlphaServer 2100 systems.

The Texas Advanced Computing Center includes a 64-node IBM Regatta-HPC cluster, a 40-processor IBM IA-64 system, a 64-processor IBM IA-32 system, an 272-node Cray T3E scalable parallel system, a 16-CPU Cray SV1 parallel vector supercomputer, a visualization laboratory with a 24-processor SGI R12000 Onyx2 with six Infinite Reality graphics pipes, and an SGI Origin 2000 which manages and provides access to currently over 30 terabytes of off-line data storage.

Information Technology Services also maintains the Student Microcomputer Facility, FAC 212, which offers personal computers for student use and useful peripherals such as optical scanners, CD-RWs and DVD drives.

**McDonald / Astronomy Networks**

Various networks have been implemented by McDonald and/or specific groups in the Astronomy Department. These include the following.

1. **Micom M600/2 port selector** - This legacy system is located in RLM 16.304A, and it switches Astronomy Department graphics terminals between various host computers. The "network" entry in the Micom host list allows any user to log into a Lantronix terminal server and then into any machine on the Internet, without having to log into a computer on our local network first. This feature should be particularly useful to visitors.

2. **Ethernet** - This modern network connects Departmental computers using TCP/IP and EtherTalk protocols. Connected computers include virtually all of the UNIX systems in the Astronomy Department as well as the vast majority of Macintosh and PC systems. The Department network is currently capable of delivering 100 Mbit ethernet to the desktop. The physical network has a star topology with three main components: a patch cord that connects your desktop computer to a wall jack, Category 5 twisted pair cable in the walls that connects each wall jack to a central wiring closet in RLM 16.304A, and a set of ethernet switches in RLM 16.304A which connect one department computer to another, and each to the outside world. Each department computer is thus wired to one port of an ethernet switch. The switch determines to which outgoing port to direct the incoming data, and then routes the incoming information to that port, and hence to the desired computer. Connections are therefore effectively point-to-point. This is important for computer security reasons, because no third party computer can typically see the data stream between the two computers in question. We have a mixture of 10 and 100 Mbit switch ports, provided by a set of 12 1900/2900/3500 series Cisco switches, all connected together with a Catalyst 5000 main switch. We typically connect the more powerful multi-user systems to the 100 Mbit ports, and other machines to the 10 Mbit ports. The department has two 100 Mbit channels to a central
switch for the building, and the building has two 1 Gbit channels to the main campus switch. The whole campus has only a 355 Mbit connection to the Internet, so one can see where a bottleneck will occur. This limited throughput to the Internet means that users need to be careful how they spend the available bandwidth (no quake servers!).

(3) *T1 line to Mount Locke* - The mountain network is connected to the Internet via a 1.5 Mbit connection, making it fairly slow. This 1.5 Mbit connection goes from the mountain through UT Permian Basin in Odessa, TX, to UT Austin, where it shares the UT Austin 355 Mbit connection to the outside world.

(4) *Mount Locke Ethernets* - There are several ethernets at Mount Locke and Mount Fowlkes, including the Visitors’ Center network, 2 HET networks, the MLRS network, and the main Mount Locke network. Each connects several machines to each other, and to the outside world through one of three routers: *Groucho, Harpo,* and *Chico.*

### Computing Team Responsibility Areas

Users should note the following general responsibility areas:

1. Mark Cornell (17.326, 471-3423 office, 633-9016 cell, cornell@puck) - group and projects manager, data acquisition and analysis software, science software installation and maintenance, IRAF, system management consulting, policy, purchasing advice, new Sun installations, etc.

2. Martha Schaefer (16.206, 232-2582 office, call office for cell phone number, mschaefer@astro) - Astro, Echo, Juno, Vesta, and Ceres system manager, network connections and changes, modem accounts, system management consulting, public Mac manager, Mac maintenance and consulting, new Mac installations, etc.

3. Chris Wilkinson (15.320H, 471-3880 office, equus@astro) - Windows support, Public PC manager, Linux and Solaris system management consulting, etc.

4. Robin Anderson (15.320A, 471-3343 office, robin@astro) - astronomy course web pages, power point presentation help, WWW support, maintenance of Department and Observatory WWW pages.

5. Dario Landazuri (15.320B, 471-3334 office) - new PC installations, Windows updates, driver and patch installation, system management consulting, etc.

6. Mae Collins (15.320G, 471-1341 office, 659-7468 cell, mae@astro) - general user services including system backups, new Astro accounts, documentation checkout, maintenance contracts, Comp Center and supercomputer accounts, media (tapes, laser printer cartridges, optical disks, overhead transparencies, paper), computer-related purchasing, etc. PLEASE NOTE: any media obtained from Mae (other than a few transparencies) must be paid for with a university account number. Please get one from your advisor or whoever BEFORE you go see Mae.

Mount Locke computing support is provided by Darrin Crook, Marian Frueh, and Mike Ward at the mountain (under the Assistant Superintendent for Technical Support, Earl Green), and all relevant Austin computing team staff including those listed above plus Sam Odoms and Erho Zhang, our programmers.

### Web Server Policy

Web servers can be a computer security problem for several reasons: 1) a misconfigured server can actually allow a hacker to access your machine and potentially do damage to it, 2) depending on how a web server is configured, it is easy to accidentally leave information accessible from the web that you did not intend to be public, and 3) a web server by definition has to reside outside a network firewall, to be accessible to the outside world. We don’t currently have a firewall, but may implement something in the future. Therefore, for security reasons, we do not permit web servers on the public
workstations, e.g. Astro. Instead, we have installed correctly configured web servers on the grad PCs and on many of the faculty-owned workstations, and recommend that these be used for course or research material, etc. Putting course material on a professor’s web server makes sense, since that material goes with the course, and belongs to the professor anyway. As a last resort, we can put material on the department web server, but since we restrict access to that server, again for security reasons, we would have to do that posting for you, and that adds overhead to any required maintenance. If you have material that you would like to post on the web, please see Mark Cornell to discuss how and where to best do this.

### Graduate Student PCs

Due to a bequest to the Astronomy Department, the department is able to purchase new PCs for each of the incoming graduate students. This is a relatively new program, and we are still experimenting with how best to provide graduate students with desktop computing access. We are very much interested in feedback on how useful the machines are to you, how you use the machines, and what we could install on the machines to make them more useful.

The first generation of grad PCs (grad01-grad07) are 450 Mhz Pentium II computers with 6 Gb disks and 128Mb of memory. The second generation (grad08-grad24) are 700 Mhz Pentium III computers with 10 Gb disks and 128 Mb of memory. The third generation (grad25-grad30) are 1 Ghz Pentium III computers with 20 Gb disks and 128 Mb of memory. The current generation (grad31-grad43) are 1.4 Ghz Pentium 4 computers with 80 Gb disks and 256 Mb of memory. We have configured these PCs with a dual boot capability, so that they can run either Windows (98, ME, or XP) or Redhat Linux (6.2 or 7.2). Each operating system has its advantages, and you might well end up using both. It is possible to go your entire graduate career using just one or the other, but that would not be the easiest way to get your work done. Windows offers Microsoft Office applications that provide the simplest way to write documents and create presentations, two activities that will take much of your time as a student. On the other hand, Linux offers a UNIX environment quite close to that used on our main research workstations. It offers a perfect X windows environment, and runs many (but not all) of the research-grade software applications that we use. Please note, however, that PC/Linux is not binary compatible with Sun/Solaris, our traditional environment, so all software must be rebuilt for Linux, and sharing data between Suns and PCs is not completely trivial.

Note that the Department retains ownership of the PCs. My group will retain root access, and will periodically update the machines for security patches, etc. However, each user is responsible for what happens on his/her machine, so please report any unauthorized or strange activity. The Linux side of the machines is installed as a diskless client, with the majority of the system software actually resident on a department server (to which you do not have write access). This may give you trouble when installing certain software, so talk to us if you have problems. Go ahead and install whatever Windows application software you like, as long as it is legal. Talk to us first, though, before changing the operating system. Please contact us if you need help, or if you need something special installed. It may be that such software is of general interest. In that case, we will install it on a network disk. Note that although the Department owns the machines, we have recently begun making upgrades to these computers using grant money from the faculty. You might ask your advisor for money if you need an improvement. In general it is not possible to upgrade the computer’s CPU, but it is possible to add more memory and disk space. When a student leaves the department, the machine will be cleaned off and given to someone else. If you no longer need the machine on your desk, let me know, so that I may distribute it to someone else.

Finally, the Cox fund has also provided the money for a terrabyte disk array for graduate student use. This disk array consists of 8 160GB IDE drives in an enclosure with a SCSI interface connected to one of our servers in 15.320. One disk is a hot spare, and one of the disks provides some redundancy, so the array can have one hard drive fail without losing data. We keep a spare disk in storage, so we can replace a failed disk rapidly. If two disks were to fail at once, we would lose the entire contents of
the array. Even with this redundancy, keep in mind that THIS ARRAY IS NEVER BACKED UP. Please do not keep the only copy of your thesis on the array. I mean it. This disk space is mounted as /raid1/preakness on the linux side of the grad PCs. If it is not mounted on your machine, please contact Chris Wilkinson.

Dos and Don’ts

1. Do back up your data. We don’t back up the desktop machines, and we don’t back up the scratch disks or the data disks on the public systems, so if you have a disk crash, and you don’t have your own backup, you will be out of luck. Please ask us to show you how to back up your data to a remote disk, zip, or tape drive.

2. Do keep your passwords safe and hard to guess, and change them periodically.

3. Do watch out for unusual activity on your computers and notify us about anything strange.

4. Do obey the University’s computer security and usage regulations. Please review them at http://www.utexas.edu/computer/policies.

5. Do obey the University’s copyright policy. Please review it at http://www.utsystem.edu/OGC/IntellectualProperty/copypol.htm. Make sure you only install software that you are legally entitled to install. We will periodically examine each system, and will delete without warning illegal software.

6. Don’t hack.

7. Don’t spam.

8. Don’t forge email.

9. Don’t run a quake server.

10. Don’t serve porn or MP3 files.

11. Think carefully about whether you want to direct email to your desktop PC. Mail will not be received when your machine is running Windows, but ought to be held at the source. However, if your machine stays booted into Windows for more than three days, your mail will begin to bounce. It is safer to use Astro or one of the other Sun workstations that is always up, with a permanent address, for your mail.

12. Think carefully about using your desktop PC’s web or ftp servers to distribute course materials or other information to the general public. Your servers would only be available when the machine is up, running Linux. Consider using your PC’s web or ftp servers for personal or temporary stuff, and use a web server on one of the faculty’s machines, or the department server, for course-related or other, more permanent material. Also, Astro has an anonymous ftp server available to which any Astro user can add files. Note that your desktop PC’s web server is turned on by default, and its anonymous ftp server is turned off by default. Contact Martha Schaefer to have this changed.

13. Don’t remove your department-owned PC from the building, or disconnect it from the network, except as instructed by us.

14. Don’t attempt to run your own web server on the public machines.