

Ingo,

I have determined the best computer for our needs. Because of the high power that we need I could not build one cheaper than we could buy. The high performance parts are not as available. I have enclosed a fact sheet on a 486 DX2-66MHX. We need this much power and speed to look at the graphics and photo images. I will modify it once purchased to further extend its capabilities. I have also included the fact sheet for the necessary hardware add-ons and software. The first is a video capture board. It will allow us to pull images off the video camera and work with them on the computer. We can digitally enhance and enlarge them, etc. The second is a software package for the Meade telescope. It will help to control it during operation and has photo enhancement also. Finally I have inclosed a fact sheet on the camcorder we need to monitor the sites. We were very limited on this one. Only one manufacturer makes a camcorder capable of accepting regular camera lense (required to hook to telescope). This is the Canon LT2. I will have to make a support but that shouldn't be to difficult. The only thing left is a VCR, which will cost about \$400.00 and a TV screen aprox. \$300.00 . Below is the prices for your budgeting purposes.

1995.00 Computer 486 DX2-66MHz, Midwest Micro Inc.

2200.00 Canon LT2 Hi8 camcorder.

45.00 Lense adapter for camcorder.

399.00 Pro Movie Spectrum, Video capture and editing board

299.00 The Sky, (CD ROM) Astronomy software.

199.00 SkyPro, (CDROM) Astronomy Photagraph editor

49.00 Telescope interface kit, SkyPro-Meade LX200

Well that pretty much wraps up the technical end. The only other hardware we need is a dome structure to house the scope. We can get the build your own kind fairly cheap, \$1500.00 aprox. I'm looking for suitable sites now. George filer has a daughter not to far from here, her place is a possibility. Let me know if there is anything else you need to know on equipment or prices. The total for the above is \$7386.00 . We have at this time an aprox. total outlay for equipment of \$12,697.00 .



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778-93-136 'JAKE' \$1999 549

486DX2-66 \$1999 #006677

- Intel 486DX2-66 Processor
- 8 Mb RAM, 128 Kb Cache
- 340 Mb IDE Hard Drive
- 32-Bit VESA Local Bus Graphics with 1 Mb
- 32-Bit VESA Local Bus IDE
- Double Speed Multimedia CD-ROM Drive
- 3.5" Diskette Drive
- 15" SVGA .28 Non-Interlaced Multi-Scan Color Monitor with Hitachi CRT
- 8-Bay Mini-Tower Case
- 5 ISA and 3 VESA/ISA Slots
- 101-Key Enhanced Keyboard
- High-Resolution Mouse
- MS DOS 6.2 and WFW 3.11

MidWest Micro

6910 U.S. Route 36 East, Fletcher, Ohio 45326
1-800-682-7260
 Fax: 1-800-562-6622
 Monday-Friday: 9 a.m. to 7 p.m. Saturday: 10 a.m. to 4 p.m.



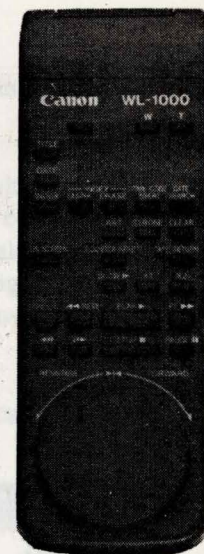
For your protection we check thoroughly for stolen credit cards.

Dealers Call:
1-800-682-4611



CANON

L2
2000-2200
Suggested Retail Price: ~~\$4,000~~ (with 15X zoom lens)

Format: Hi8, 8mm


Size/Weight: 6 $\frac{1}{16}$ -in. W x 9 $\frac{5}{16}$ -in. D x 6 $\frac{1}{2}$ -in. H; 3.1 lbs., without battery pack and lens.

Image Sensor: $\frac{1}{2}$ -in., 410,000-pixel CCD.

Lens Reviewed With: 15:1, 8-120mm zoom. Lens will zoom at 2 speeds.

Record Time: 2 hrs., with E6-120/P6-120 tape.

Date/Time: Recorded on a separate track—can be displayed or hidden during playback. Date displayed as JAN. 5 '94; time displayed as 12:23:35 AM.

Macro Mode: Selectable auto-focus.

Fade Type: Fade to and from white; audio follows video. Will also perform a digital dissolve and wipe from a still to live action.

Viewfinder: .7-in. monochrome CRT.

Minimum Illumination: .5 lux with f/1.4 aperture and slow shutter speed (Gain-Up mode). 50 lux is the minimum requirement for a good picture on all camcorders.

Video Dub: Yes.

Edit Switch: Yes.

Shutter Speeds: $\frac{1}{60}$, $\frac{1}{100}$, $\frac{1}{200}$, $\frac{1}{400}$, $\frac{1}{1000}$, $\frac{1}{4000}$, $\frac{1}{10000}$ -sec. Various slow shutter speeds available for Gain-Up mode.

White Balance: Auto, with 24-grid assessment system, manual, hold.

Record Review: Yes.

A/V In/Out: Video, Audio left and right, S-Video, In/Out switch selectable.

Remote: Supplied, infrared. Includes Strobe, Art Freeze and

shuttle dial with 4 speeds each way.

Digital Features: Dissolve, Wipe, 2X Tele Extender, Gain Up, Strobe, Art Freeze, Frame Advance, Slow Motion.

Playback Clarity: Excellent indoors and outdoors.

Color Accuracy: Excellent—saturated colors, warm tones in Auto White-Balance.

Ergonomics: Balanced, steady feel in hand—designed for two methods of holding: two hands near the eye (like a 35mm still camera) or one hand through the body strap. Zoom and start/stop controls at fingertips for either method.

Supplied Accessories: WL-1000 Wireless Controller, CA-100 Compact Power Adapter, DC-100 DC Coupler, BP-718 Battery Pack, S-150 S-Video Cable, STV-150 Stereo Video Ca-

ble, SS-200 Shoulder Strap.

Optional VL Mount

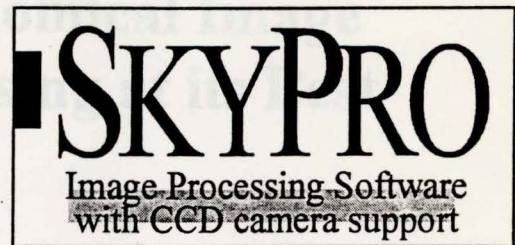
Lenses: 10X CL 10-100mm f/1.8-2.8 with Optical Image Stabilization; 15X CL 8-120mm f/1.4-2.1; 8X CL 8.7-69.6mm f/1.4-1.8; Extrawide-Angle 3X CL 5-15mm f/1.6-2.6; and Ultra-telephoto CL 250mm f/4.

Optional Accessories: EOS Adapter VL; Extender CL 2X; XWD-55 Wide Converter; TL-55 Tele Converter; FS-55U Filter Set; FS-55U/FS-72U Filter Set; CB-110 Car Battery Adapter; MB-100 Microphone Boom; MM-200 Stereo Mixing Mic; MC-100 Multi-Battery Charger; VL-20 Battery Video Light; ZR-100 Zoom Remote Controller; ED-100 Video Editor; SC-E708 Soft Carrying Case; HC-1000 System Case; RS-1000 Rain Shield; GB-100 Grip Belt; WS-20 Wrist Strap; BP-E71/BP-E722 battery packs.

Camcorder



And

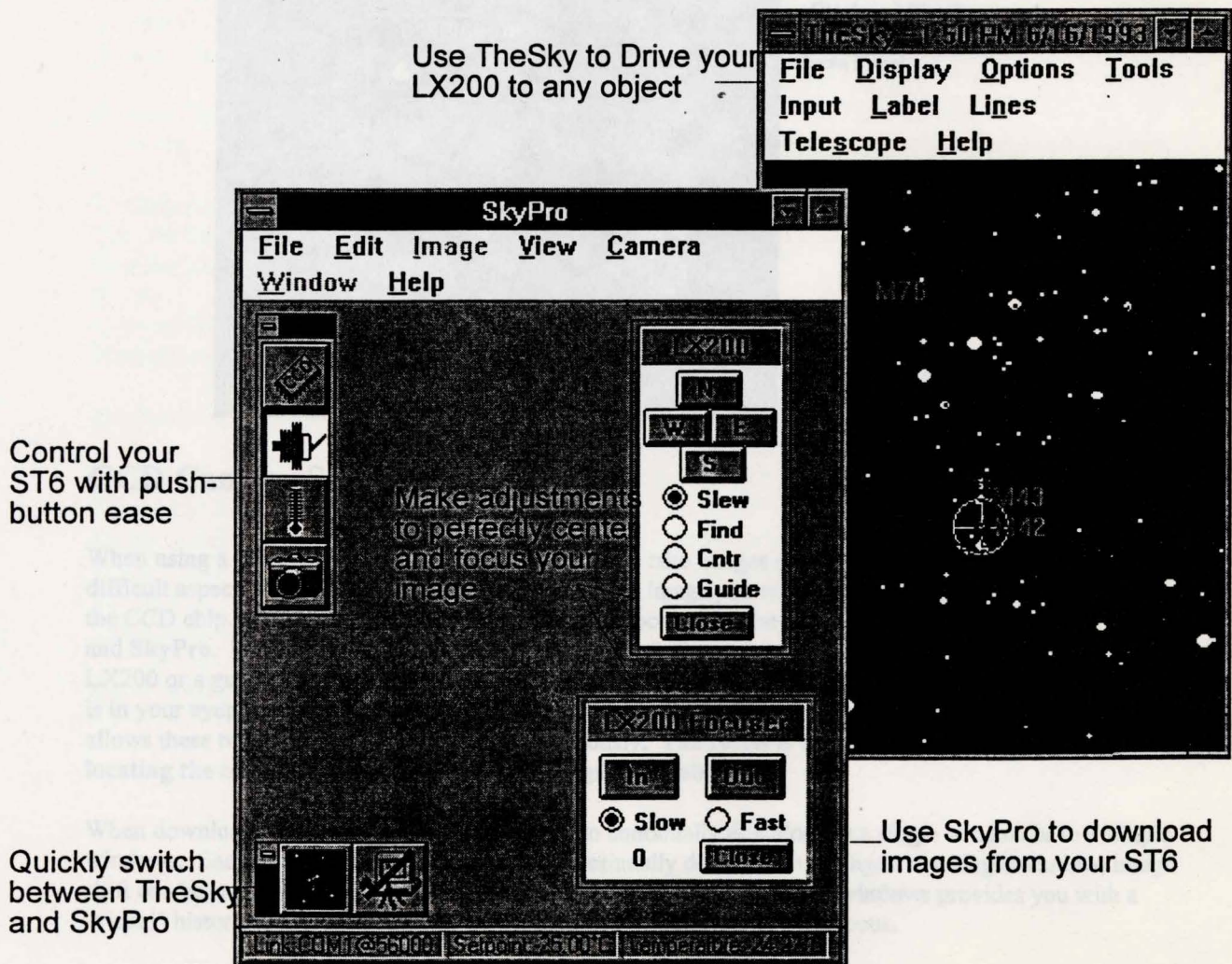


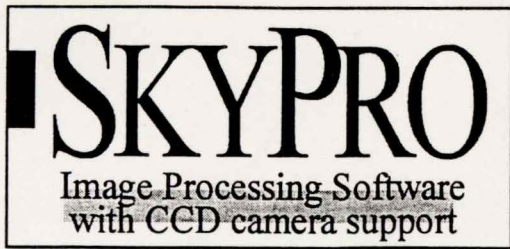
Locating and Imaging Celestial Objects

Software Bisque has revolutionized the process of capturing images with your CCD camera with TheSky Astronomy Software and SkyPro Image Processing Software.

When using a charge coupled device (CCD) camera to take images of celestial bodies, probably the most difficult parts of the process include finding the image you wish to capture and focusing the image on the CCD chip. Using TheSky with a computer-telescope interface (either a computer driven telescope like the Meade LX200 or a guiding system like the SGT-MAX) makes locating celestial objects very easy. Once TheSky has guided you to the object, you can go directly to SkyPro and expose the image on your CCD camera. Windows allows TheSky and SkyPro to be run simultaneously. The result is a seamless integration between locating and imaging celestial objects.

The diagram below depicts a typical setup between TheSky with an LX200 interface, and SkyPro with a link to an ST6 camera.





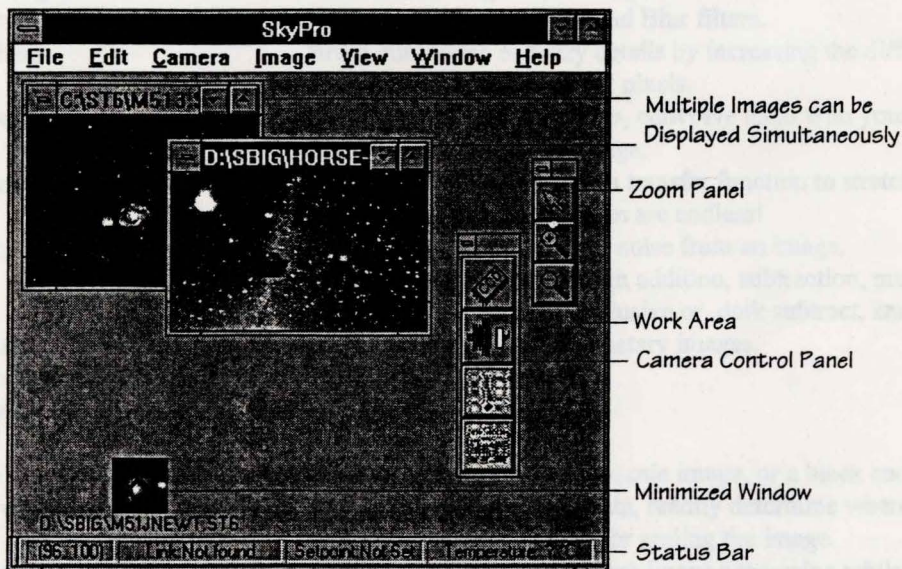
Astronomical Image Processing at its Best

List of Image Processing Features

Image Processing

SkyPro has dozens of image processing functions that allow you to enhance your astronomical images. With SkyPro's comprehensive manual and on-line help as a guide, you can transform an average image to reveal hidden structure and detail!

Shown below is SkyPro's workplace, where multiple images can be displayed at one time! Combine, stretch, scale, or mask images easily. For a list of the image processing functions in SkyPro, please see the next page.



CCD Camera Support

When using a charged couple device (CCD) camera to take images of celestial bodies, probably the most difficult aspects of the imaging process are finding the image you wish to capture and focusing the image on the CCD chip. Software Bisque has simplified this process with the use of **TheSky Astronomy Software** and **SkyPro**. Using **TheSky** with a telescope interface (either a computer driven telescope like the Meade LX200 or a guiding system like the SGT-MAX) makes locating celestial objects very easy. Once the object is in your eyepiece, you can go directly to **SkyPro** and expose the image on your CCD camera. **Windows** allows these two applications to be run simultaneously. **The result is a seamless integration between locating the celestial object and taking an image of the object!**

When downloading images, **SkyPro** allows you to continually download to a single window or to multiple windows. Each option has its advantages. By continually downloading images to a single window, image shift can be easily detected. Continually downloading images to multiple windows provides you with a "visual" history, that allows you compare images to achieve the optimum focus.

Moreover, while focusing your camera on a bright object, you can define which portion of the CCD chip you wish to download (by simply dragging a rectangle on a graphical representation of the CCD chip) thereby drastically reducing the download time!

List of Image Processing Features

The following table provides a partial list of the image processing features found in SkyPro.

Feature	Brief Explanation
Brightness and Contrast	Change the brightness and contrast of your image.
Negative	Display the negative of an image.
Equalization	Reassign the brightness levels of an image equally across the entire range of pixel values.
Posterization	Limit the number of brightness levels present in an image.
Pixellize	Average the pixel brightness values over a specified region.
Histogram Brighten	Non-linearly brighten an image.
Smooth Filters	Average, Custom average and Blur filters.
Sharpen Filters	Bring out hidden or fuzzy details by increasing the difference in the brightness levels of adjacent pixels.
Custom Filters	Build your own digital filters, convolve them with your image.
Outline	Display edges within an image.
Transfer Function	Graphically define your own transfer function to stretch, scale or mask your image. The possibilities are endless!
Remove Noise	Filter out unwanted random noise from an image.
Combine	Combine two images through addition, subtraction, multiplication, division, blend, and, or, exclusive or, dark subtract, and flat field.
Unsharp Mask	Bring out faint detail in planetary images.
Flip Vertical	Flip an image vertically.
Flip Horizontal	Flip an image horizontally.
Rotate	Rotate an image.
Convert To	Convert any image to a grayscale image, or a black and white image.
Histogram with Statistics	Graphically represent the data, readily determine where the data lies and pinpoint brightness ranges for scaling the image.
Duplicate an image	Duplicate an image to perform image processing while preserving the original image.
Size an image	Expand or compress your image to fit any sized window.
Display an image's palette	View the palette associated with any image.
Image Information	View information about any file; many formats are supported by SkyPro.
Night Vision	A red screen preserves your night vision while downloading images.
Printing	Print a hard copy of any image SkyPro can display.
Copy images to the Clipboard	Copy images or portions of images to the clipboard. This allows you to import them to most Windows applications.
Paste images from the Clipboard	Paste images from the clipboard into SkyPro.