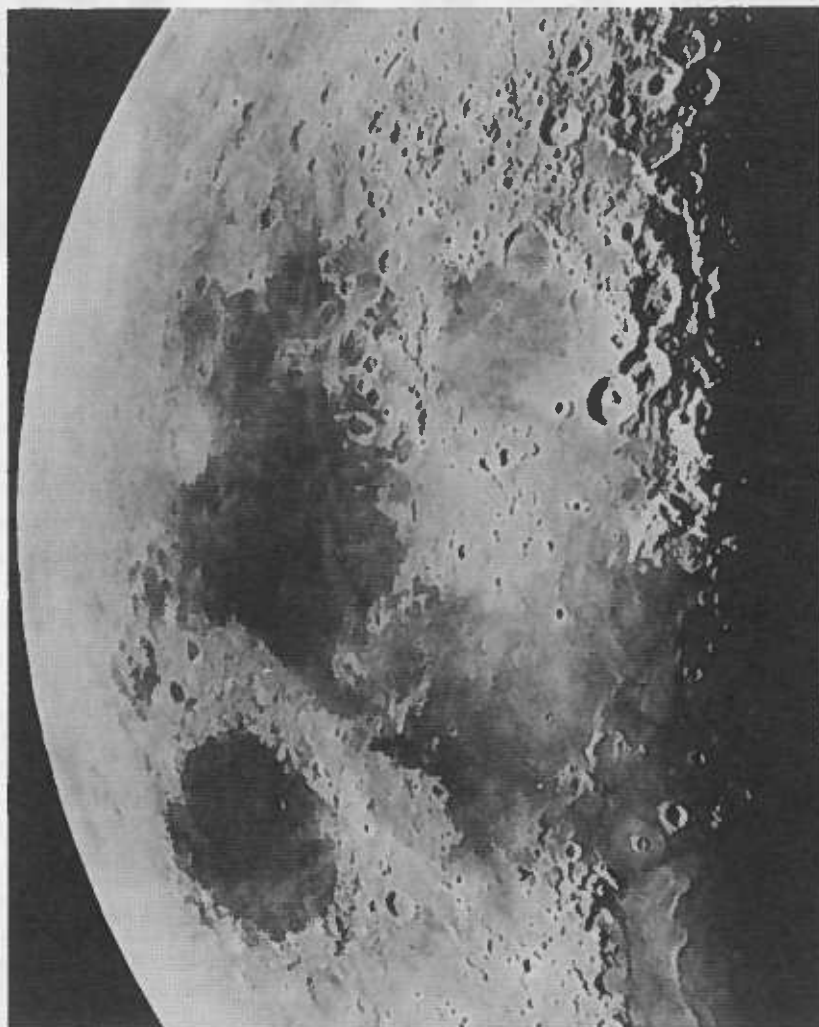


MIZAR

ASTRONOMICAL TELESCOPES AND ACCESSORIES

Craters On The Moon Surface

All The Astro-Photographs
In This Catalog Were Taken
By Using MIZAR TELESCOPES
AND ACCESSORIES



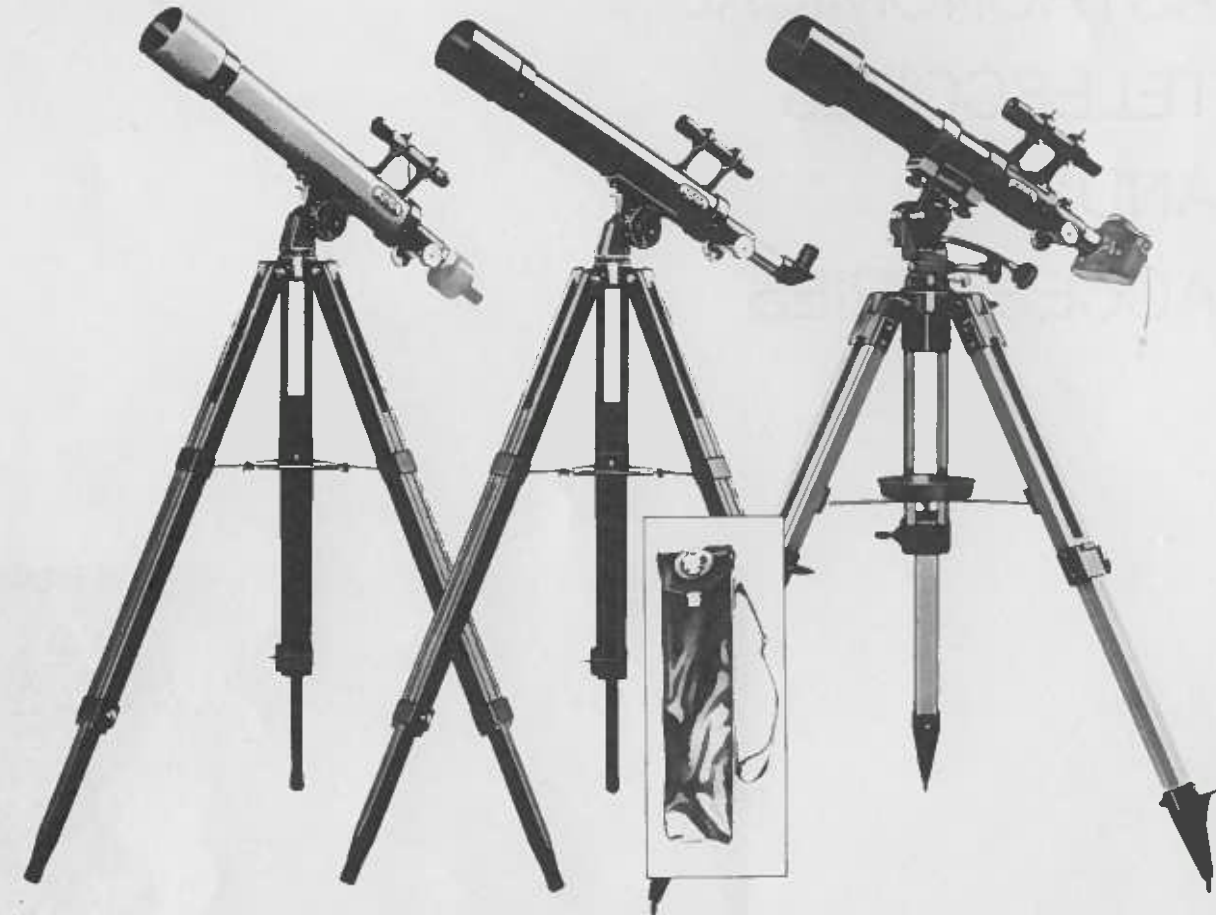
REFRACTOR
MIZAR
A-60SR



REFRACTOR
MIZAR
A-60B



REFRACTOR
MIZAR
K-68SR



	A-60SR	A-60B	K-68SR
Main Tube (color)	(light green)	(orange)	(orange)
Objective Lens	Achromatic Lens, Coated		
Clear aperture	60 mm	60 mm	68 mm
Focus	600 mm/ Short	600 mm/ Short	600 mm/ Short
Light Gathering Power	73	73	94
Magnitude Limit	10.7 mag.	10.7 mag	10.9 mag
Resolving Limit	1.93 "	1.93 "	1.71 "
Eye-Pieces / Magnification			
(1)	NR 20mm/ 30x	NR 20mm/ 30x	NR 20mm/ 30x
(2)	NR 6mm/ 100x	NR 6mm/ 100x	NR 6mm/ 100x
(3)			
Mounting	" A " Type		" K " Type
Tripod	Wooden Extensible (71~130 cm)		Wooden (72~131 cm) Aluminum is available
Accessories	4x20mm Finder Sun-Filter Diagonal Prism	4x20mm Finder Sun-Filter Diagonal Prism Carrying Bag	6x30mm Finder Sun-Filter Diagonal Prism Erecting Prism Camera Adaptor Ring

REFRACTOR
MIZAR
Y-60M



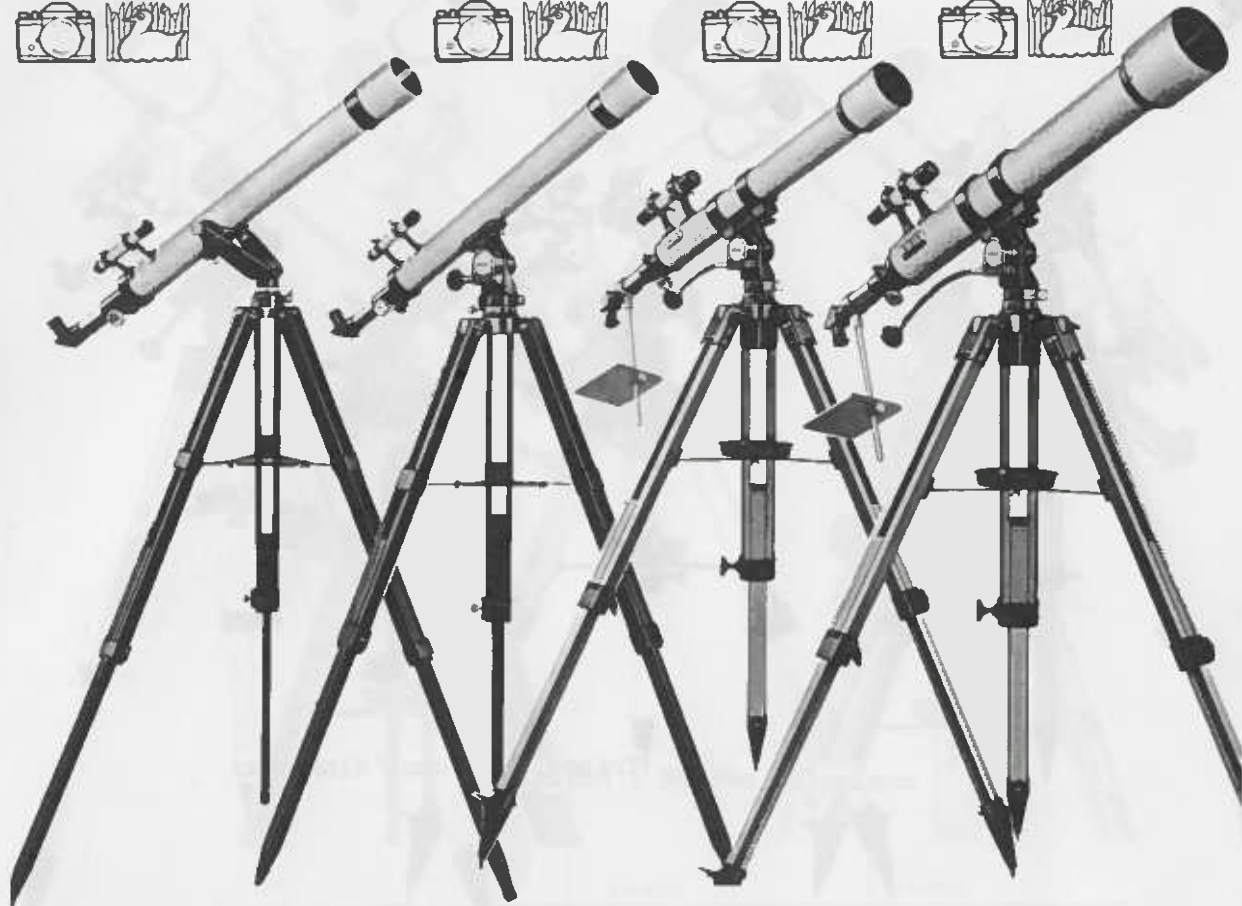
REFRACTOR
MIZAR
K-60M



REFRACTOR
MIZAR
K-68M

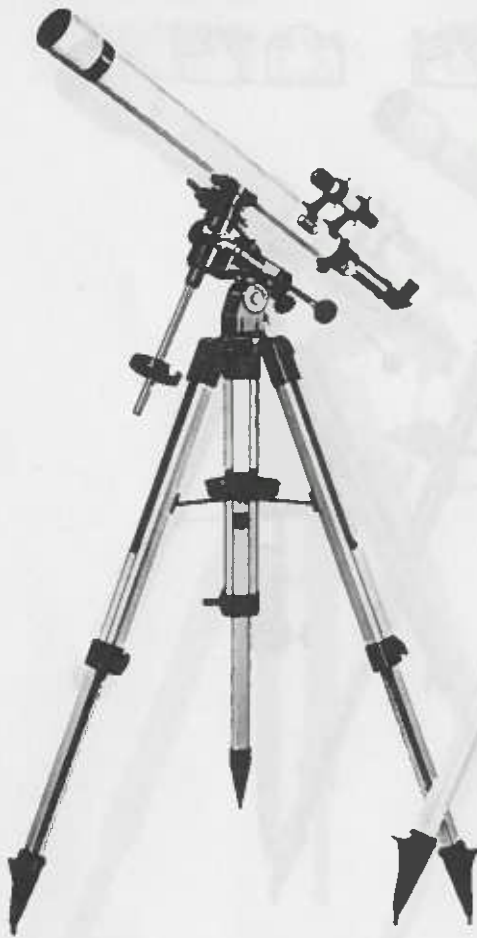


REFRACTOR
MIZAR
K-80M



	Y-60M	K-60M	K-68M	K-80M
Main Tube (color)	(white)	(white)	(white)	(white)
Objective Lens	Achromatic Lens, Coated			
Clear aperture	60mm	60mm	68mm	80mm
Focus	800mm/ Medium	800mm/ Medium	800mm/ Medium	900mm/ Medium
Light Gathering Power	73	73	94	131
Magnitude Limit	10.7 mag.	10.7 mag.	10.9 mag.	11.3 mag
Resolving Limit	1.93 "	1.93 "	1.71 "	1.45 "
Eye-Pieces / Magnification				
(1)	NR 20mm/ 40x	NR 20mm/ 40x	NR 20mm/ 40x	NR 20mm/ 45x
(2)	NR 8mm/ 100x	NR 10mm/ 80x	NR 10mm/ 80x	NR 10mm/ 90x
(3)		NR 6mm/ 133x	NR 6mm/ 133x	NR 6mm/ 150x
Mounting	" Y " Type	" K " Type		
Tripod	Wooden (71~130 cm)	Wooden Extensible (72~131 cm) Aluminum Extensible is available		
Accessories	4x20mm Finder Sun-Filter Diagonal Prism	4x20mm Finder Sun-Filter Diagonal Prism	6x30mm Finder Sun-Filter Diagonal Prism Sun Reducing Cap	6x30mm Finder Sun-Filter Diagonal Prism Sun Reducing Cap

REFRACTOR
SP-60J



REFRACTOR
SP-68SR



REFRACTOR
SP-68R



Tripod : Wooden / Aluminum

	SP-60J	SP-68SR	SP-68R
Objective	Achromatic Lens, Coated		
Clear Aperture	60 mm	68 mm	68 mm
Focal Length	900 mm	600 mm	1000 mm
Light Gathering Power	73	94	94
Magnitude Limit	10.7 mag.	10.9 mag.	10.9 mag
Resolving Limit	1.93 "	1.85 "	1.71 "
Eyepieces / Magnification			
(1)	K 20mm/ 45x	K 20mm/ 30x	K 20mm/ 50x
(2)	HM 12.5mm/ 72x	NR 8mm/ 75x	HM 12.5mm/ 80x
(3)	NR 6mm/ 113x		NR 6mm/ 167x
Accessories			
(1)	6x30 Finder	6x30 finder	6x30 finder
(2)	Diagonal Prism	Diagonal Prism	Diagonal Prism
(3)	Sun Filter	Sun Filter	Sun Filter
(4)	Sun Projection Screen		Sun Projection Screen
			Polar Axis Finder

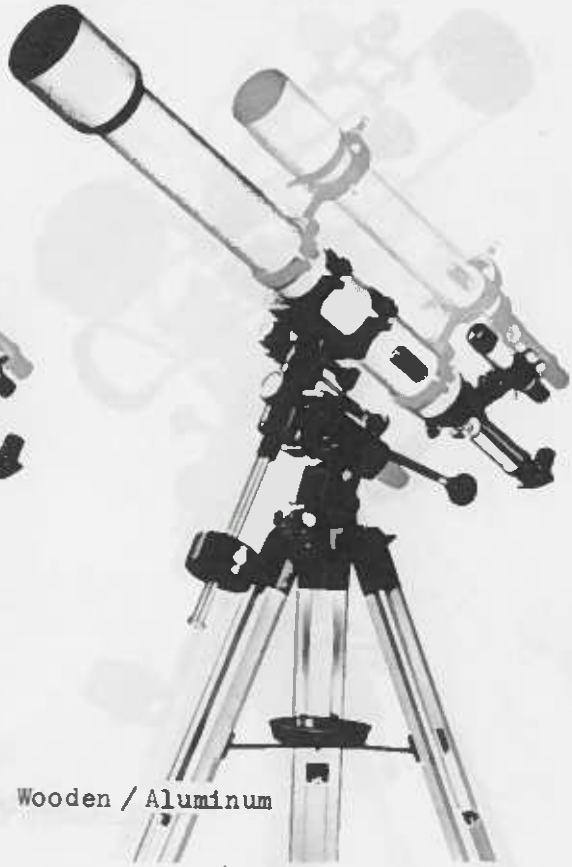
- SP & AR TELESCOPES (MAIN TUBE)
REFRACTORS
- Doublet achromat coated lens
 - Easy handling and maintenance
 - Good image stability
 - Suitable for solar observation
 - Easily convertible to terrestrial use with erecting prism

- REFLECTORS
- Parabolic precision mirror, aluminum coated and SiO coated
 - Razor sharp image without color aberration
 - Excellent for visual and photo works where resolving power and light grasp is essential
 - Cheaper for the large size of objective

REFRACTOR
SP-80R



REFRACTOR
AR-80R



Tripod : Wooden / Aluminum

	SP-80R	AR-80R
Objective	Achromatic Lens, Coated	
Clear Aperture	80 mm	80 mm
Focal Length	1000 mm	1000 mm
Light Gathering Power	131	131
Magnitude Limit	11.3 mag.	11.3 mag.
Resolving Limit	1.45 "	1.45 "
Eyepieces / Magnification		
(1)	K 20mm/ 50x	K 20mm/ 50x
(2)	HM 12.5mm/ 80x	HM 12.5mm/ 80x
(3)	NR 6mm/ 167x	Or 6mm/ 167x
Accessories		
(1)	6x30 Finder	6x30 Finder
(2)	Diagonal Prism	Diagonal Prism
(3)	Sun Filter	Sun Prism
(4)	Sun Projection Screen	Sun Filter
	Polar Axis Finder	Sun Projection Screen

- SP EQUATORIAL MOUNTING
(For SP Series Telescopes)
- Massive heavy duty cast aluminum
 - Permits use of same mounting with different tube units
 - Manual and electrical slow motion controls available
 - Polar axis is adjustable for 0°~90° of latitude. Polar axis finder is belonging
 - Convertible to "Alt-Azimuth" type mounting. That is easier to operate for beginners

- AR EQUATORIAL MOUNTING
(For AR Series Telescopes)
- Achieves high mechanical excellence for the serious amateurs
 - Provides the tracking accuracy required for more advanced subjects, such as long exposure astro-photography
 - Precise polar adjustment is made with X-Y screw device. Polar axis finder attachable.
 - Various auxiliary accessories and sub-systems are also available

REFRACTOR

SP-100L

REFRACTOR

AR-100L

Tripod : Wooden / Aluminum

	SP-100L	AR-100L
Objective	Parabolic Mirror, Aluminum Coated	
Clear Aperture	100 mm	100 mm
Focal Length	1000 mm	1000 mm
Light Gathering Power	204	204
Magnitude Limit	11.8 mag.	11.8 mag.
Resolving Limit	1.16 "	1.16 "
Eyepieces / Magnification		
(1)	K 20mm/ 50x	K 20mm/ 50x
(2)	NR10mm/ 100x	HM 9mm/ 111x
(3)	NR 5mm/ 200x	Or 6mm/ 167x
Accessories		
(1)	6x30 Finder	6x30 Finder
(2)	Sun Filter	Sun Filter
(3)	Aperture Stop	Aperture Stop
(4)	(for the sun)	(for the sun)
	Polar Axis Finder	

WHAT IS AN "EQUATORIAL MOUNTING"

EQUATORIAL MOUNTING is a special mechanism designed for astronomical telescope only. You can track stars' movement across the sky by simple operation of it.

As you know, stars (including the sun, the moon) slowly and constantly move to the west as the earth turns east. It is called the Sidereal Motion. This motion is apparently very slow. But, when

you see a star through telescope with high magnification, it is fast enough to make the star disappear out of your view within only a minute.

Therefore, it becomes necessary to provide the telescope with counteracting motion throughout your observation.

The EQUATORIAL MOUNTING is very convenient for the purpose mentioned above -- that is -- you just have to turn so called "Right-Accension Fine Motion Handle" slowly. It makes your observation much

REFRACTOR

SP-100SL

REFRACTOR

AR-100SL

Tripod : Wooden / Aluminum

	SP-100SL	AR-100SL
Objective	Parabolic Mirror, Aluminum Coated	
Clear Aperture	100 mm	100 mm
Focal Length	600 mm	600 mm
Light Gathering Power	204	204
Magnitude Limit	11.8 mag.	11.8 mag.
Resolving Limit	1.16 "	1.16 "
Eyepieces / Magnification		
(1)	6x30 Finder	6x30 Finder
(2)	Sun Filter	Sun Filter
(3)	Aperture Stop	Aperture Stop
Accessories		
(1)	(for the sun)	(for the sun)
(2)	Polar Axis Finder	
(3)	K 25mm/ 24x	K 25mm/ 24x
(4)	K 9mm/ 67x	Or 7mm/ 86x

smoother, and if you wish, you can drive the telescope automatically by a Motor Drive.

It may seem rather difficult for beginners to set up the EQUATORIAL MOUNTING according to a certain method before the observation starts.... The "Polar Axis" of the mounting should be set so as to point towards the Polar Star (or, the Polar Axis should be tilted at an angle equal to your latitude and towards due north).

But, you would acquire such skills to set up very

soon, if you like star-gazing. Note #SP Mounting (and also #AR Mounting) is easily convertible to the ALT-AZIMUTH, the other type of mounting and much easier for beginners, but which provides not so smooth motion on tracking the stars.

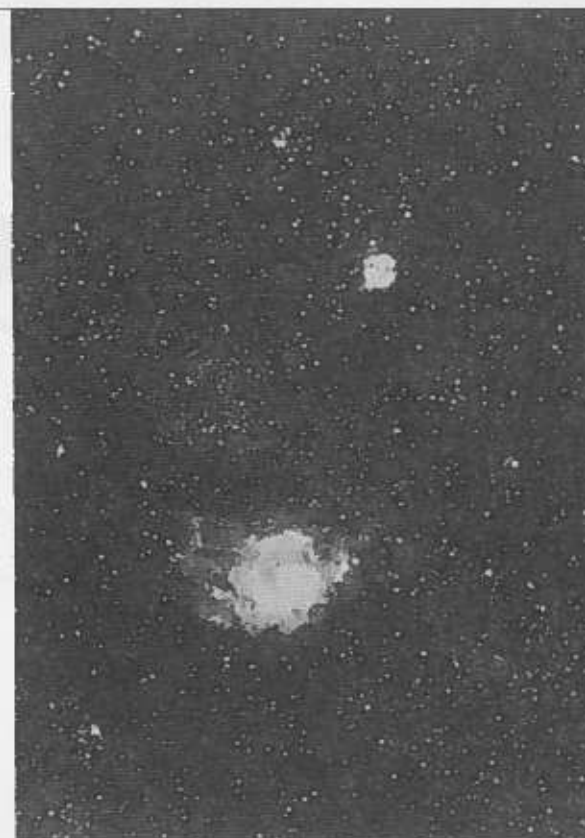
EQUATORIAL TELESCOPE

REFRACTOR

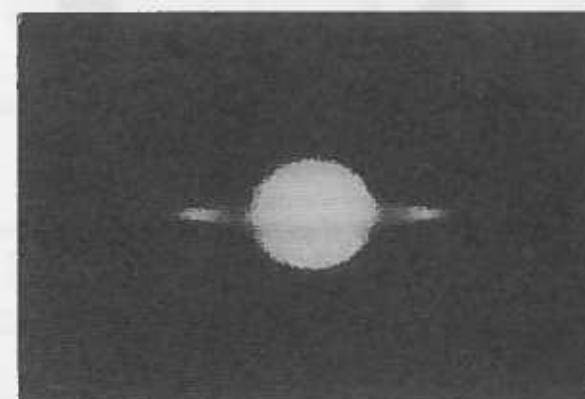
AR-120SL



Tripod : Wooden / Aluminum



Diffused Nebulae M8 and M20



Saturn And Its Ring (1981)

	AR-120SL
Objective	Parabolic Mirror, Aluminum Coated
Clear Aperture	120 mm
Focal Length	720 mm
Light Gathering Power	29x
Magnitude Limit	12.2 mag.
Resolving Limit	0.97"
Eyepieces / Magnification	
(1)	K 25mm/ 29x
(2)	Or 7mm/ 103x
Accessories	
(1)	6x30 Finder
(2)	Sun Filter
(3)	Aperture Stop
(4)	(for the sun)

The Meanings of Technical Terms

Refractor : Its objective system consists of lenses.

Reflector : Its objective system consists of mirrors. (Main mirror is concave.)

Cata-dioptric : Combined objective system of mirror and lens.

Clear Aperture : Effective diameter of the objective.

Focal Length : The distance between the objective and its focus.

Light Gathering Power : The comparative area size of the clear aperture compared with the naked eye (=1).

Magnitude Limit : The magnitude of the faintest star which can be seen through it.

Resolving Limit : The ability to show fine detail. The larger the clear aperture, the better the resolving power. (Unit= Second of Angles 1/3600 Degree)

ACCESSORY



MOTOR DRIVE : MMD-QZ

Automatically tracks the sidereal motion of stars by driving your equatorial mounting. High accuracy ($\pm 0.005\%$) by quartz control. 3 speeds available / normal, rapid & stop. Source : 4.5~12V DC (4x1.5v batteries). Specify your telescope model or R.A. gear's teeth number.



CAMERA ADAPTER

Adapt your S.L.R. camera body to the telescope end, and it works as a super telephoto lens.

Prime Focus Method (without eyepiece) : Entire image of the sun and the moon, nebulae, clusters...

Eyepiece Projection Method (with eyepiece) : Enlarged image of the sun-spots, moon craters and planets

Use together with 'T-Mount'



T-MOUNT FOR CAMERA ADAPTER

Connect CAMERA-ADAPTER and your S.L.R. camera body with it. Specify your camera model.

* Nikon, Canon, Minolta, Asahi-Pentax, Yashica, Olympus, Etc..*



ILLUMINATED RETICLE EYEPIECE : K 12MM

For accurate guiding in long exposure astro-photography; constellations, nebulae...etc. A red L.E.D. lamp illuminates a square crossline reticle inside the eyepiece. Source: 2.7~3.1V DC.



EYEPIECES

Get additional eyepieces according to your observing requirements. A short focal length gives higher magnifications, but with narrow field; on the other hand, a long focal length gives wide and bright field of view.

HM type is cheaper, K and Or types are of higher performance.

Type	Focal Length (mm)					
HM	6	8	9	12.5	20	25
K				9	12.5	20 25 40*
Or	4	5	6	7	9	12.5 25

Size: Sleeve O.D. 24.5mm (* : screw mount)



SUN FILTER

Reduces the strong sun light into approximately the full-moon's brightness. Indispensable in direct visual observations.

Caution! For over 6.5CM telescopes, use together with 'Aperture Stop' or 'Sun Prism'.

MOON FILTER

For lunar observation with larger telescopes.



6x30 VIEW FINDER

Achromatic objective lens and cross-hair eyepiece. Focus adjustable. Two ring brackets included.

ACCESSORY



BARLOW LENS : 2x , 4x

Inserting it between the telescope end and the ordinary eyepiece, the magnification increases by 2x or 4x. Useful particularly at photo-guiding.



DIAGONAL PRISMS (FOR REFRACTIVE TELESCOPE ONLY)

STAR DIAGONAL PRISM

#Small For 24.5mm O.D. eyepieces

#Large For 36.4mm x Pl.0mm screw mount eyepieces (Ex. K-40mm)

SUN PRISM (For Solar Observation Only)

Reduces sun light down to 5%. Use for over 8 CM objective lens telescope.



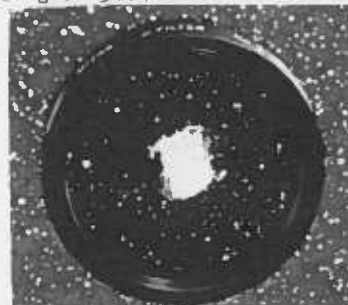
SUN PROJECTION SCREEN (FOR REFRACTORS ONLY)

Projecting the image of the sun on the white plate. Use with a diagonal prism.



TERRESTRIAL PRISM (FOR REFRACTOR ONLY)

Use for terrestrial viewing, giving an upright image. 36.4mm screw mount.



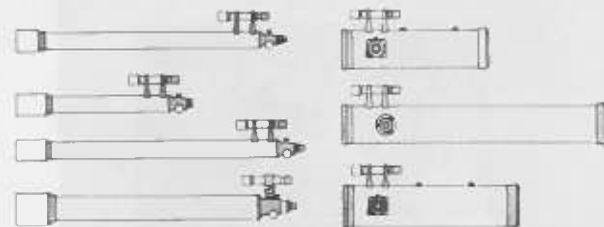
ANTI LIGHT POLLUTION : μ (MU) FILTER

Artificial light pollution and natural air-glow are rejected by special multi-interference-layers. It gives incredibly high contrast effect in nebular observations.

No.1 =22S for visual; 24.5mm O.D. eyepieces

No.2 =35.5S for photo & visual; MIZAR TELESCOPES #100SL, #120SL

No.4 =52S for photo; Attach to the front screw mount of camera lens. Including step rings for 49S, 55S & 58S.



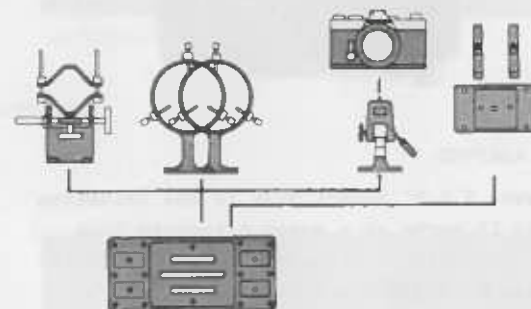
ADDITIONAL TELESCOPE TUBES (WITH 6x30MM VIEWFINDER)

Name	Type	Clear Aperture	Focal Length
60R	Refractor	60 mm	900 mm
68R	"	68 mm	1000 mm
68SR	"	68 mm	600 mm
80R	"	80 mm	1000 mm
100L	Reflector	100 mm	1000 mm
100SL	"	100 mm	600 mm
120SL	"	120 mm	720 mm

ADDITIONAL TUBE SUPPORTERS FOR SP- AND AR- MOUNTINGS

Tube supporters for following telescopes are available. Specify tube name and mounting type.

* 60R, 68R / 68SR, 80R, 100L / 100SL, 120SL



MULTI-USE PLATE FOR SP- AND AR- MOUNTINGS

Put this plate plus some optional units on your equatorial mounting, then you can make up 'Dual-Telescope', 'Meteor Camera' or 'Astro Graph' ..Etc.. See other accessories.

GUIDING TELESCOPE MOUNTING

Brighter star is advantageous as the guiding target in the long exposure photography. Within 6-degrees for each direction you can move the guiding telescope on this mounting. Telescope tube O.D. 40mm~80mm. Use together with 'Multi-Use Plate' (8) or 'Accessory Mount Ring' (20).

SUB-TELESCOPE MOUNT RINGS (TWO IN ONE SET)

Put sub-telescope (tube O.D. 40mm 80mm) on the main telescope or 'Multi-Use Plate' with them. Each ring has three adjusting screws and locking nuts. Accessory Mount Rings (two) are necessary except for tubes with accessory-shoes on it.

ACCESSORY

CAMERA HEAD

Take a beautiful constellation-photograph with your camera. The camera is set on the telescope tube with this 'Camera Head'. 'Accessory Mount Ring' (20) is necessary in usual cases.



ACCESSORY MOUNT RING

It has a flat base and two screws to put the accessory on it. Specify your telescope name or tube O.D..



POLAR AXIS FINDER

Get perfect polar-axis alignment quickly and easily with it. Put this finder into the polar-axis tube end of AR (or SP) equatorial mounting, and catch Polar-Star in the field of view. 'Position Calculator' for precise setting comes together.



ALUMINUM TRIPOD

Heavy duty and light weight. For SP- and AR-mounting or others.

Type	Length
S	60cm ~ 90cm extensible
L	82cm ~ 130cm extensible



The Double Clusters in Perseus



Globular Cluster M22