

Among the stars the easiest targets are the Pleiades group in the constellation, Taurus and the Great Nebula in Orion.

Turn your telescope onto the seven visible stars of the Pleiades and you will see hundreds of additional stars not visible to the naked eye.

Located about midway down the "sword" of Orion is the Great Nebula. This great gas cloud is in the process of forming a new star, which will have an estimated mass 10,000 times greater than our sun.

Stars in general are not interesting to the casual observer. The magnifying power of telescopes has no apparent effect on them, no detail can be observed, no visual information is revealed. However to the experienced observer, there are hundreds of interesting stars or groups of stars which provide a lifetime of rewarding study.

An example of one such star is Betelgeuse, the light-orange star marking one shoulder of Orion. It is one of the largest known stars, with a diameter 400 times our own sun. Earth's orbit could easily fit inside Betelgeuse. One of the most interesting features of this young star is that it periodically expands and contracts.

Sirius, the brightest star in the night sky is actually 27 times brighter than the sun. In itself, Sirius is of no particular interest, however because of its companion star, the Pup, a "binary" system formed, Sirius and the Pup orbit about a common center of gravity.

About 1/10,000 as bright as Sirius, The Pup is far denser. On Earth, one cubic inch of the Pup's material would weigh one ton. The estimated mass of the Pup is 250,000 times greater than the Earth.

As dense as the Pup is, it does not hold the record. The densest of the known stars is known as AC+70° 8247. A tablespoon of its substance would weigh 720 tons.

On the other hand the largest known star, Epsilon Auringne B, is 100 million times less dense than water. If it were here on earth, it would have to be tied down to keep it from floating away.

If you wish to learn more about astronomy, there are several sources of information available from libraries and bookstores.



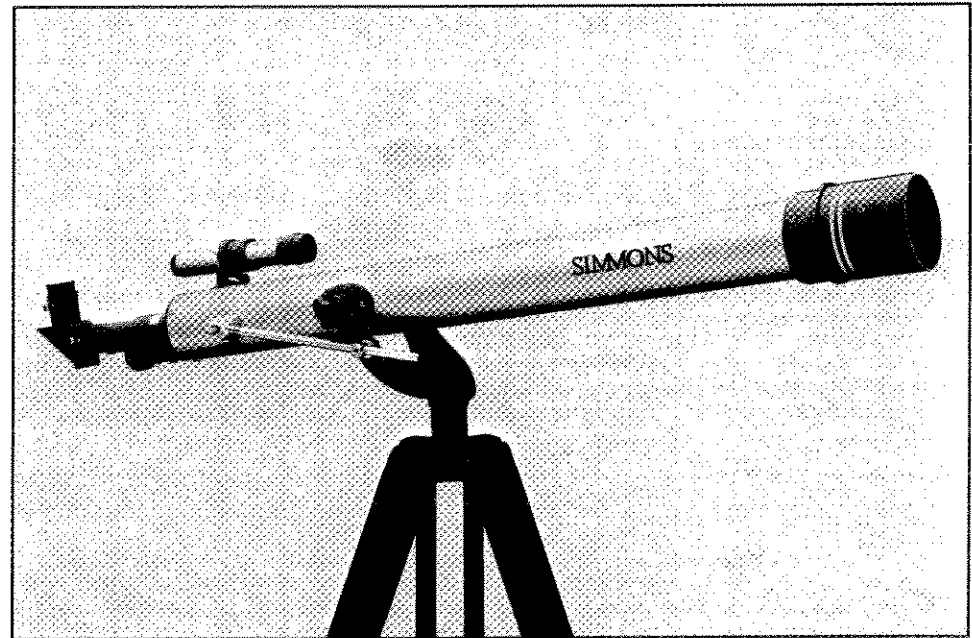
## 525 POWER / 60MM REFRACTOR TELESCOPE ASSEMBLY AND USER INSTRUCTIONS

**CAUTION:** Viewing the sun with this telescope or even the unaided eye can result in blindness or other serious eye damage which may be permanent.

### *Simmons Limited Lifetime Warranty\**

Simmons warrants this product to be free of defects in materials and workmanship. Simmons will repair or at its option, replace this product without charge with respect to parts and labor, providing our examination indicates that a defect exists. In the event this product model is no longer available at the time warranty service is required and Simmons has elected replacement, a substitution of equal or greater value and similar performance will be made. This warranty does not include damage caused by abuse, improper handling, installation, maintenance, unauthorized repairs or modifications. No implied warranty of this product is extended. Some states do not allow limitations of implied warranty, so this limitation may not apply to you. In that event any such implied warranty is limited to that required by law. Simmons shall not be liable for incidental or consequential damages, including but not limited to lost profits or other economic or commercial losses. For warranty or non-warranty repairs, product should be returned postage prepaid to Simmons Outdoor Corporation. When returning product for service (warranty and non-warranty) include a note explaining the problem. Return product with a check or money order in the amount of \$7.00 to cover handling and postage. For non-warranty repairs you will be advised of the service charges prior to any work being done. This warranty gives you certain legal rights and you may have other rights which vary from state to state. As defined by federal law, this is a limited warranty.

\* This warranty only applies in the Continental United States.



For Models:

800447      800449  
800450      800723



# 525 POWER/60MM TELESCOPE

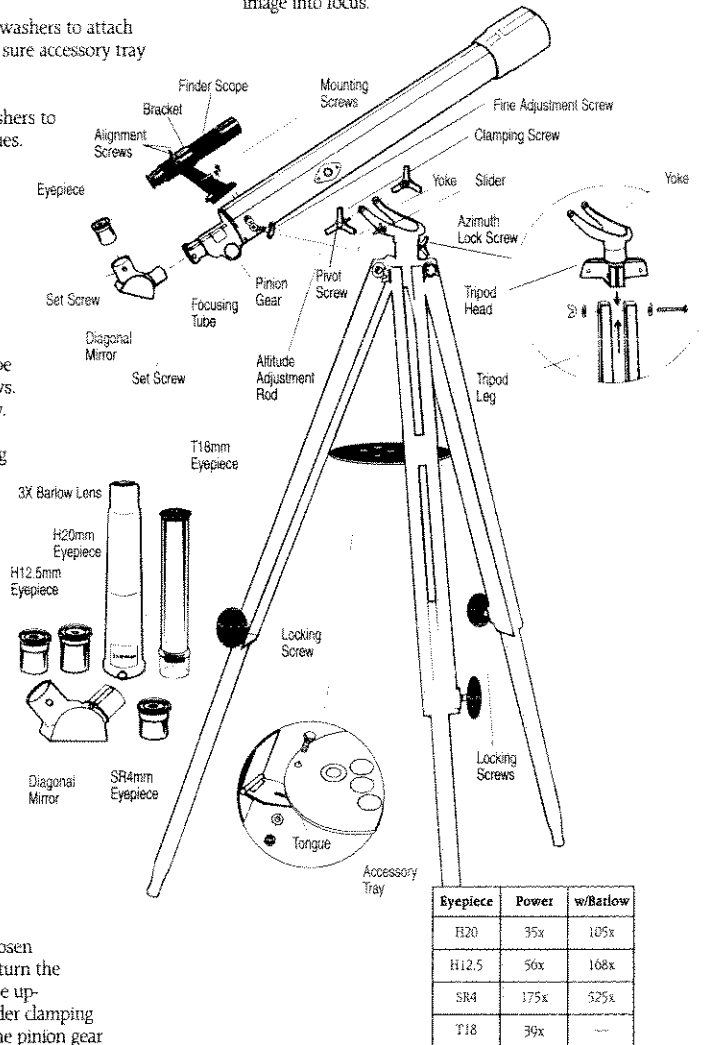
ASSEMBLY / USER INSTRUCTIONS

## ASSEMBLY

1. Remove all parts from the box and identify them.
2. Extend tripod legs. Thread leg locking screws into leg clamps and tighten.
3. Use the large bolts, nuts and washers to attach tripod legs to tripod head. Be sure accessory tray tongues face inward.
4. Use small bolts, nuts and washers to attach accessory tray to tongues.
5. Remove telescope from plastic bag.
6. Slip altitude adjustment rod into slider located on yoke.
7. Align saddle with mounting holes in yoke. Attach telescope to yoke, using the pivot screws. Tighten slider clamping screw.
8. Remove finderscope mounting screws from telescope, position finderscope bracket on telescope and replace mounting screws.
9. Insert diagonal mirror into focusing tube and H20mm eyepiece into diagonal mirror. Secure diagonal mirror and eyepiece by tightening the set screws.

and move in the direction needed. Retighten slider clamping bolt. To refine vertical adjustment, rotate the altitude angle rod fine adjustment screw.

2. Look into the eyepiece and rotate pinion gear to bring image into focus.



Eyepiece	Power	w/Barlow
H20	35x	105x
H12.5	50x	168x
SR4	175x	525x
T18	39x	---

Assembly is now complete, but the finder scope must be aligned with the main telescope.

1. In the daytime, aim the telescope at a distant object (1/4 mile or more) by sighting along the main body tube. Loosen the azimuth locking screw to turn the telescope left or right. To make up-down adjustments, loosen slider clamping bolt, grip the telescope near the pinion gear

**NOTE:** Objects will appear reversed (mirror image).

3. Refine aiming of telescopes as needed to center target object in the field of view. Tighten azimuth locking screw to prevent further movement.
4. Look into the finderscope (objects will appear up-side down). Focus by rotating finder eyepiece. Center target object on crosshair intersection by turning the alignment screws in the finderscope bracket.
5. Replace the H20mm eyepiece with the H12.5mm eyepiece. Repeat steps 3 and 4. Remove diagonal mirror and eyepiece. Replace diagonal mirror with the Barlow lens. Insert H20mm eyepiece into Barlow lens and repeat the alignment process.

## USING THE T-18 EYEPIECE

The T18mm eyepiece produces normal images for terrestrial viewing. To use, remove the diagonal mirror from focusing tube and replace with the T18 eyepiece.

The T18 also works as a 14X microscope. Place clear plastic end over object to be inspected.



## GETTING THE MOST OUT OF YOUR TELESCOPE

Take the time to become familiar with your new telescope. Learn the names of the various parts, where they are located and how they work. It is best to do this in the day time.

Notice how as magnification is increased, the image becomes darker, the field of view (area seen through the telescope) decreases and focusing becomes more critical.

When setting up for a viewing session, place the telescope in an area sheltered from the wind if possible. Best night time viewing will be away from city lights and when the atmosphere is "steady" (good viewing conditions). With a little practice, you will learn to judge when viewing conditions are good. Look for the nights where the stars shine brightly with little or no twinkling.

Use low power to take advantage of the wider field of view and brighter images. Reserve your high powers for those nights when viewing conditions are really good and there is some detail to be seen.

If there is an astronomy club in your area, consider becoming a member. You can learn more in an hour from experienced hobbyists than in a month of uninformed casual observing. The chamber of commerce, library, science museum or planetarium may have information regarding nearby clubs.

Until you become familiar with your telescope, it is best to

pick easy targets for your first views of our celestial surrounding. The easiest and most interesting of all, is the moon.

The moon is best viewed at low power and when it is less than full. Because of its proximity to Earth, its angular speed is quite fast - 15 arc minutes per minute of time or 1/2 its diameter per minute. Magnification provided by the telescope not only makes the image larger, it also has the effect of increasing apparent speed, making tracking more difficult.

The brightness of the full moon tends to flatten some surface details and hide others. Best viewing is when it is waxing or waning.

The planets Venus, Mars, Jupiter and Saturn are all easy targets.

Venus is exceeded in brightness only by the sun and moon. It is best viewed at twilight or just before dawn. Look for Venus on the horizon. It may be seen as a disc or as a thin crescent.

Mars appears as a reddish-orange disc. Some surface details may be seen when it is it's closest to earth.

Jupiter, the largest of the known planets in our solar system is an interesting subject. The great red spot is easily seen, although in small telescopes it appears more blue-gray than red. Equally easy to see is the equatorial belt. It also appears blue-gray.

Four of Jupiter's moons, known as the Galilean moons, are seen as tiny specs of light lying on either side of this giant planet.

Saturn, appearing dull yellow in the night sky, reveals its ring systems readily. Depending on it's orbital position relative to Earth, the rings may be seen as a streak of light cutting through Saturn, to a broad band surrounding a suspended disc.

Uranus and Neptune are not easy targets for the beginner because they are not bright enough to be seen with the naked eye, making locating them difficult.

As your interest in astronomy increases and you gain experience you will learn of a celestial "addressing" system which makes locating unseen objects possible.

Pluto, the furthest of the known planets requires a telescope with a five or six-inch diameter objective lens, just to make it barely visible.

Mercury, although a "visible" planet is not an easy telescope target for the novice. It lays so close to the sun that it can only be seen in the early morning or early evening hours, low on the horizon. March, April, August and September are the best months to observe Mercury.