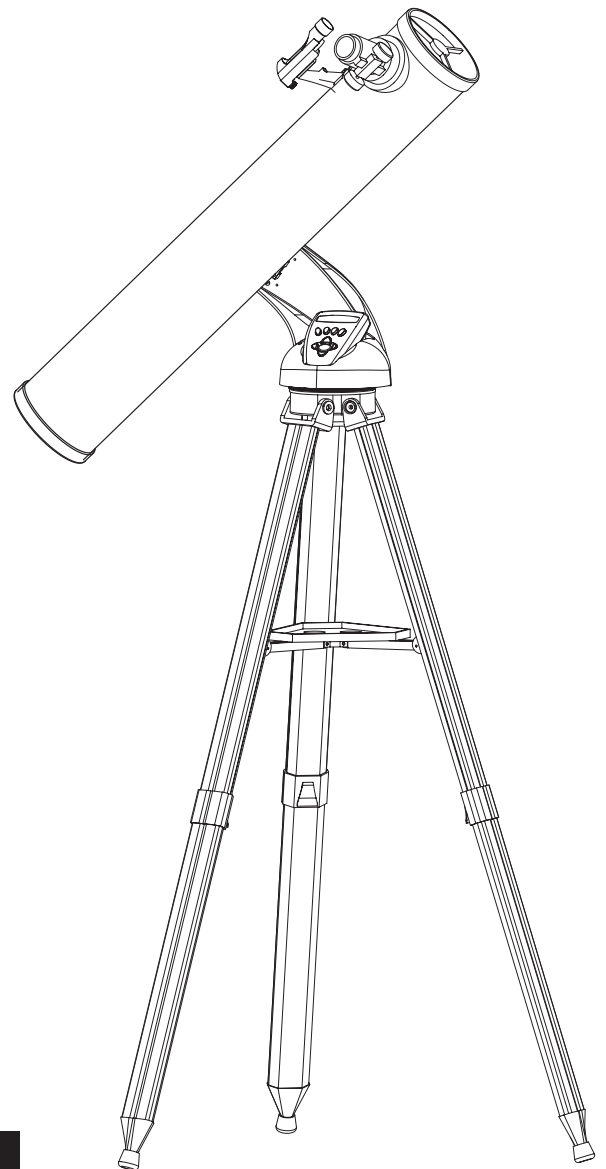


# Bushnell



## INSTRUCTION MANUAL



78-8876 76MM REFLECTOR

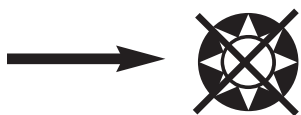
Congratulations on the purchase of your Bushnell Northstar Goto Telescope. Included with this product are several value added features such as a Moon Filter, 9V battery, CDROM, and Magnetic Compass. The moon filter should be screwed into the eyepiece when viewing the full moon to increase contrast of this extremely bright phase of the moon. The 9V battery is included as well as an interactive astronomy CDROM for your computer to aid you in your understanding of the night sky. Finally, the magnetic compass will aid you in finding North after dark while setting up for your viewing session.

After reading through this manual and preparing for your observing session as outlined in these pages, you can start enjoying this fantastic product. At Bushnell we have made every effort to give you a superior quality product that meets your high standards for Quality, Durability, and Performance.

However, if you have questions about use and function or included accessories or feel the product is not working properly, please **DO NOT RETURN IT TO THE PLACE OF PURCHASE**. For assistance, personal customer service and prompt customer care, please call our Toll Free Number (800) 423-3537 or visit our website at [www.bushnell.com](http://www.bushnell.com).



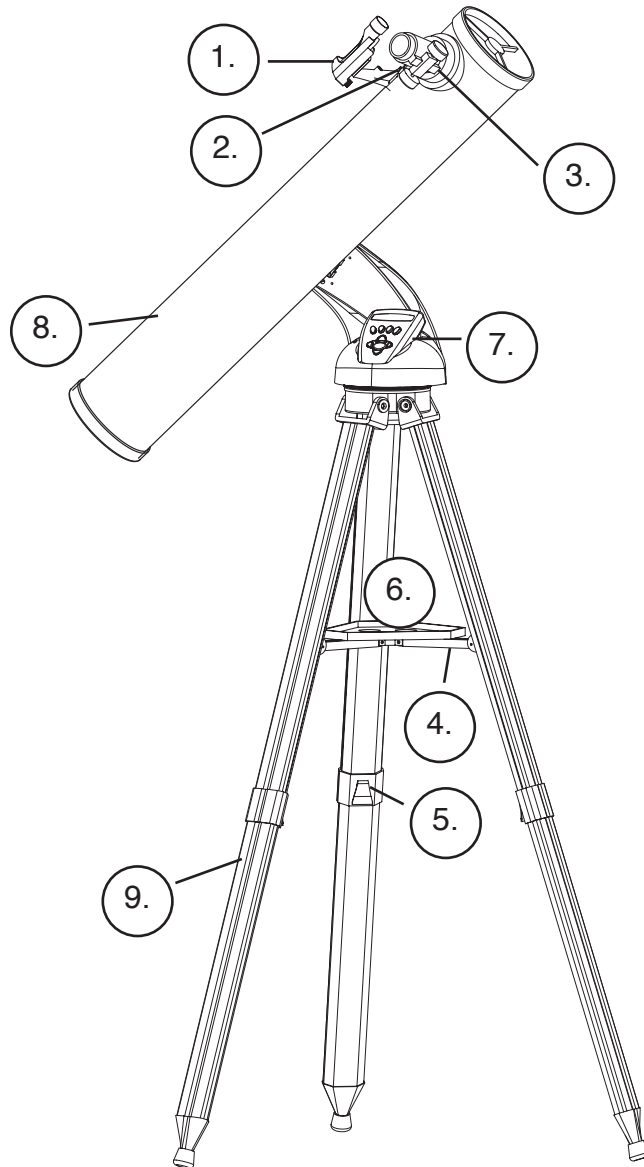
NEVER LOOK DIRECTLY AT THE SUN  
WITH YOUR TELESCOPE



PERMANENT DAMAGE TO YOUR EYES  
MAY OCCUR

## PARTS DIAGRAMS

### 78-8876 76MM REFLECTOR



### TELESCOPE PARTS DIAGRAM

- |                                       |   |
|---------------------------------------|---|
| 1. Red Dot Finderscope                | 6. Quick-Release Accessory Tray             |
| 2. 1.25" Format Eyepiece              | 7. Remote Computer Controller               |
| 3. Rack and Pinion Focusing Mechanism | 8. Main Telescope Tube                      |
| 4. Accessory Tray Brace               | 9. Quick-Release Adjustable Aluminum Tripod |
| 5. Quick-Release Tripod Leg Lever     |   |

## DETAILED ASSEMBLY

No tools are required for assembly of your telescope.

Remove all components from the carton and identify all components. It is a good idea to lay all the parts out in front of you before assembly. Since your telescope is a precision optical system the parts require careful handling—particularly the onboard computer, telescope, eyepieces, and various accessory lenses.

### SET UP TRIPOD AND ACCESSORY TRAY

1. Stand Northstar Computerized Star Locator Assembly and attached tripod legs in the upright position. Spread tripod legs to a comfortable distance.
2. Fold down the accessory tray braces and place the Quick Release Accessory Tray on top of braces. (See Quick Assembly Diagram)
3. Turn accessory tray until it snaps into place.
4. Adjust tripod leg height to suit by opening tripod leg lever and extending tripod legs to desired height. Clamp Tripod Leg lever closed when complete.

### ATTACH TELESCOPE TUBE

1. Locate Main Telescope Tube.
2. Remove Telescope Tube Thumb Nuts from side of Telescope Tube. (See Quick Assembly Diagram)
3. Position Main Telescope Tube Attachment Bolts through Telescope Tube Bracket at the top of the Northstar Computerized Star Locator Assembly. Make sure the telescope is pointing in the correct direction. (Logo on telescope tube should be right-side up.)
4. Reattach Telescope Tube Thumb Nuts to Main Telescope Tube Attachment Bolts once Main Telescope Tube and Northstar Computerized Star Locator Assembly are assembled together.

### ATTACH FINAL TELESCOPE ACCESSORIES

1. Locate Red Dot Finderscope.

**For Reflector Telescopes:** Remove Finderscope attachment nuts from Main Telescope Tube. Place Finderscope Assembly over Finderscope Attachment Bolts and reattach Finderscope thumb nuts to Finderscope Mount Bolts.

**NOTE:** The large end of the finderscope should face the open end of telescope tube.

2. Attach Low Power Eyepiece.

**For Reflector Telescope Models:** Insert lowest power eyepiece in the focusing mechanism by backing out eyepiece set screw and inserting eyepiece fully.

3. Tighten all set screws to secure accessories.
4. Remove Objective Dust Cover exposing entire diameter of open end of telescope.

### SELECTING AN EYEPIECE

You should always start viewing with the lowest power eyepiece, which in this case is the 20 mm lens. Note: the base power of each eyepiece is determined by the focal length of the telescope objective lens. A formula can be used to determine the power of each eyepiece: telescope OBJECTIVE lens focal length divided by EYEPIECE focal length = MAGNIFICATION (e.g. Using the 20 mm lens, a sample calculation could look like this:  $750 \text{ mm} / 20 = 38x$  or 38 power. Telescope models will vary in focal length.)

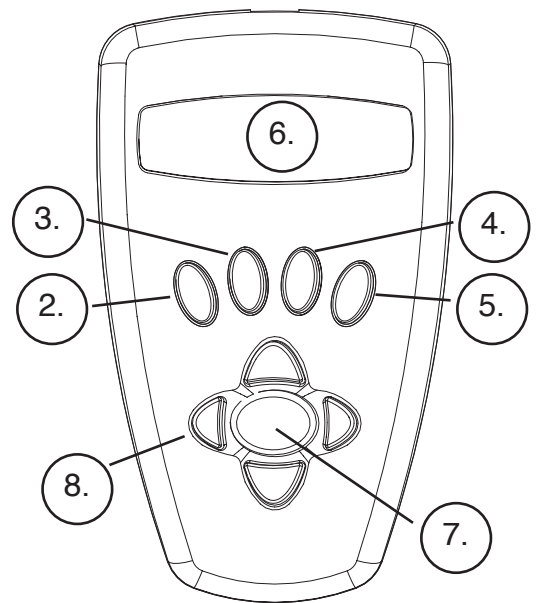
Included with this telescope is a Barlow lens. Barlow lenses are used to double or triple the power of your telescope. Place your Barlow between the focusing tube and the eyepiece. Using the example above, your 3x Barlow lens would give you a total power of 114x or 114 power. ( $38 \times 3 = 114x$  or 114 power). The magnification calculation would look like this:  $750 \text{ mm} / 20\text{mm} = 38$  power.  $38 \text{ power} \times 3 = 114$  power.

## ENJOYING YOUR NEW TELESCOPE

1. First determine your targeted object. Any bright object in the night sky is a good starting point. One of the favorite starting points in astronomy is the moon. This is an object sure to please any budding astronomer or experienced veteran. When you have developed proficiency at this level, other objects become good targets. Saturn, Mars, Jupiter, and Venus are good second steps to take.
2. The first thing you need to do after assembling the telescope as planned is center the desired object in the finderscope's cross hairs. Provided you did a reasonable job aligning the finderscope, a quick look through the main telescope tube at low power should reveal the same image. With the lowest power eyepiece (the one with the largest number printed on it) you should be able to focus the same image that you saw through the finderscope. Avoid the temptation to move directly to the highest power. The low power eyepiece will give you a wider field of view, and brighter image—thus making it very easy to find your target object. At this point with a focused image in both scopes, you've passed the first obstacle. If you don't see an image after attempting to focus it in, you might consider aligning your finderscope again. Once you pass this step, you'll will enjoy the time spent ensuring a good alignment. Every object you center in the finderscope will be easily found in the main telescope tube, which is important for continuing your exploration of the night sky.
3. The low power eyepieces are perfect for viewing the full moon, planets, star clusters, nebulae, and even constellations. These should build your foundation. However, for more detail, try bumping up in magnification to higher power eyepieces on some of these objects. During calm and crisp nights, the light/dark separation line on the moon (called the "Terminator") is marvelous at high power. You can see mountains, ridges and craters jump out at you due to the highlights. Similarly, you can move up to higher magnifications on the planets and nebulae. Star clusters and individual stars are best viewed through the low power no matter what.
4. The recurring astronomical theater we call the night sky is an ever-changing billboard. In other words, the same movie does not play all the time. Rather, the positions of the stars change not only hourly as they seem to rise and set, but also throughout the year. As the earth orbits the sun our perspective on the stars changes on a yearly cycle about that orbit. The reason the sky seems to move daily just as the sun and the moon "move" across our sky is that the earth is rotating about its axis. As a result you may notice that after a few minutes or a few seconds depending on what power you are viewing at, the objects in your telescope will move. At higher magnifications especially, you will notice that the moon or Jupiter will "race" right out of the field of view. To compensate, just move your telescope to "track" it in the necessary path.

## NORTHSTAR COMPUTER INTERFACE DIAGRAM

1. On/Off Button (On Northstar Base)
2. Back Button
3. Enter Button
4. Scroll Up Button
5. Scroll Down Button
6. LCD Display
7. "GO" Button
8. Motorized Movement Buttons (4)
9. Battery Door (On Northstar Base)



## BUTTON FUNCTIONS

**ALL BUTTONS ARE ILLUMINATED FOR NIGHTTIME USE.**

**On/Off Button:** The On/Off Button will turn the Northstar Computerized Star Locator on and off. This button flashes or strobos on and off during normal use. To turn the unit off, simply depress and hold the On/Off button for three seconds and release. (Note: The Northstar Computerized Star Locator will automatically turn itself off after 10 minutes of inactivity.)

**Back Button:** This button functions to navigate to the previous level within the operating framework and/or back to the previous level of input.

**Enter Button:** This button functions to select certain menu choices. By pressing the ENTER button Northstar will advance to the selected level. When an object name or number is listed on the screen, the ENTER button can also be pressed to display a scrolling text description of the object.

**Scroll Up Button:** This button functions to scroll up through various menus within Northstar. Anytime you encounter a blinking text/number option, the scroll button will display the various choices within that menu. (Note: To select an option that you have scrolled to, just press the ENTER button.)

**Scroll Down Button:** This button functions to scroll down through various menus within Northstar. Anytime you encounter a blinking text/number option, the scroll button will display the various choices within that menu. (Note: To select an option that you have scrolled to, just press the ENTER button.)

**"GO" Button:** The GO button will automatically center any object displayed on the LCD display. By pushing the "GO" button, the telescope will automatically find and follow the selected object until another object is selected and the "GO" button is pushed again.

**Motorized Movement Buttons:** These four multi-directional buttons will allow the user to override the tracking system and move the telescope utilizing the motors manually to another desired location. The longer these buttons are depressed, the faster the Northstar will move until it reaches its maximum speed.

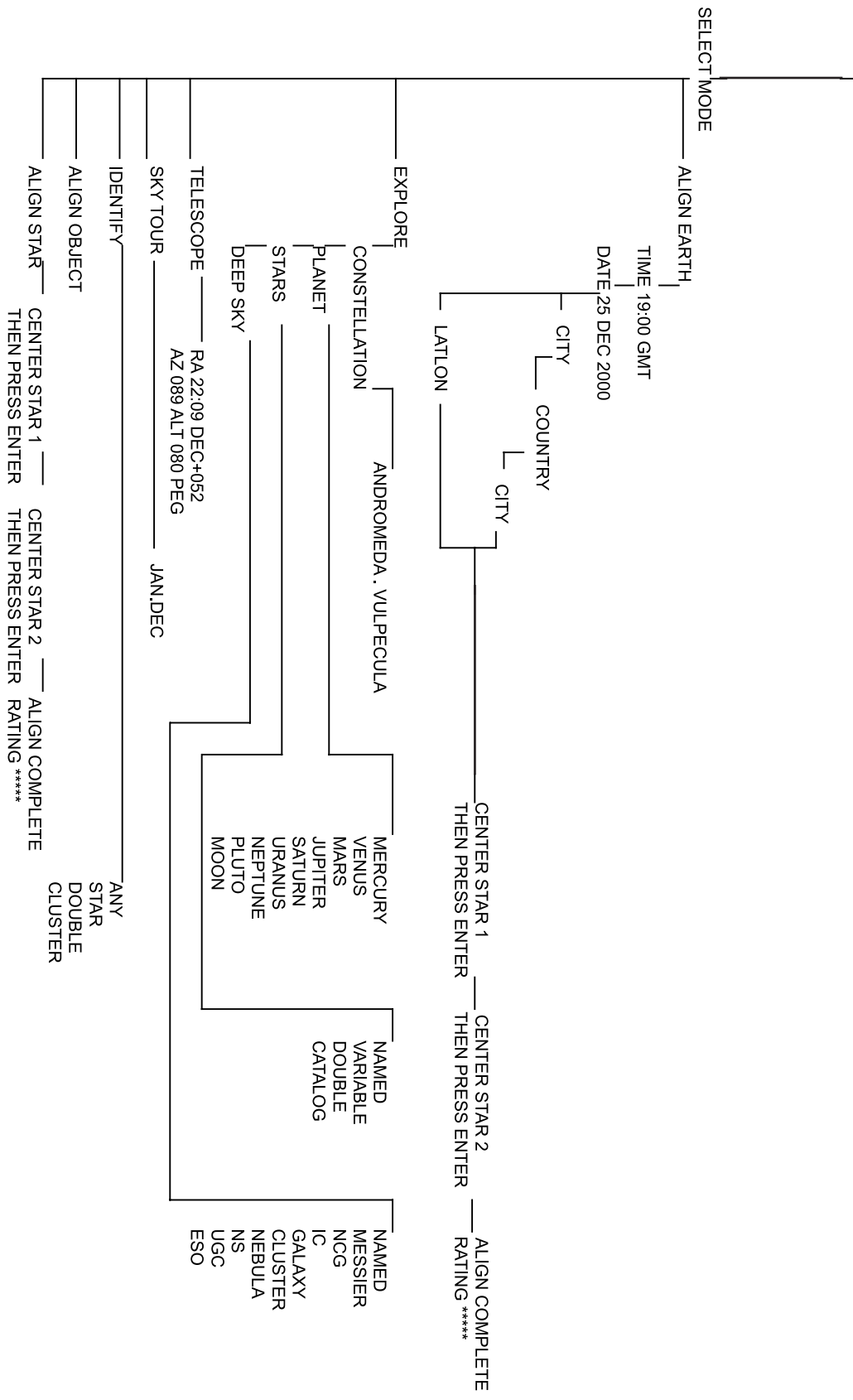
## LCD DISPLAY

The Liquid Crystal Display (LCD) is a two-line, sixteen character display. The LCD is illuminated for use during nighttime viewing just like the buttons.

# MENU TREE

## BUSHNELL NORTHSTAR COMPUTER MENU STRUCTURE (For Step-By-Step Easy Use Refer to Quick Reference Guide)

WELCOME TO BUSHNELL NORTHSTAR



## ALIGNING NORTHSTAR FOR THE FIRST TIME (Continued)

### STEP 2: SET THE TIME

By using the SCROLL UP and SCROLL DOWN buttons and the ENTER button, the time can easily be set as well as the time zone. Each flashing option will need to be changed to read the appropriate number. Once the appropriate number is displayed, accept the number by pressing ENTER. Then set the next flashing option until the time and time zone are set.

### STEP 3: SET THE DATE

Again by using the SCROLL UP and SCROLL DOWN buttons and the ENTER button, the date can easily be set. Each flashing option will need to be changed to read the appropriate number or month. Once the appropriate number is displayed, accept the number by pressing ENTER. Then set the next flashing option until the day, month and year are set.

### STEP 4: SET THE LOCATION

The next screen will display:

```
ALIGN EARTH  
CITY +-+
```

CITY will be flashing. By pressing the ENTER button, the display will change to:

```
COUNTRY  
U.S.A.+-+
```

The country will be flashing.

Again by using the SCROLL UP and SCROLL DOWN buttons and the ENTER button, the COUNTRY can be chosen. When the appropriate Country is found and the ENTER button is pushed, choose the city that you are closest to by pressing ENTER when it is displayed.

**NOTE: CHOOSE THE CITY CLOSEST TO YOUR VIEWING LOCATION. THIS IS NOT A CRITICAL STEP AND THE ALIGNMENT WILL BE REFINED AUTOMATICALLY AS WE PROGRESS.**

After four simple criteria that any consumer should know, the telescope now knows where over 20,000 astronomical objects are in the night sky to a relative precision. With just two more steps, you will zero in on pinpoint accuracy.

Now the telescope will lead you through a simple two star alignment process. YOU DO NOT NEED TO KNOW WHERE ANY STARS ARE. You just simply follow the directions.

A scrolling message indicates to CENTER STAR 1 THEN PRESS ENTER

Then the display will read:

```
CENTER STAR 1  
+120 +52 MIZAR
```

Push the "GO" button and the telescope will automatically move to the general vicinity of the first guide star--in this case MIZAR

The guide stars will be the brightest stars found in that area of the sky. Northstar will automatically "zero out" the guide star and the display will read:

```
CENTER STAR 1  
0◊0 0◊0 MIZAR
```

Note as you move from greater than 10 degrees away from an object to under ten degrees, the display moves into tenths of degrees with the arrows acting as decimal points (Example 8+5=8.5 degrees below the object).

After getting the star zeroed in, you need to do as the screen told you—CENTER STAR 1. In other words, the star might appear in the lower left corner of your telescope's eyepiece.

By looking through the eyepiece, center the star in the field of view by using the Motorized Movement Buttons or move the telescope by hand and press ENTER.



## USING NORTHSTAR FOR THE FIRST TIME (Continued)

Now imagine that you are a parent trying to impress your children (or vice versa). Ten minutes into your first observing session you are already learning astronomical objects.

This is a great educational tool !!!!

To find the object, just press the "GO" button and that object will be right in the telescope's eyepiece!

By pressing the BACK button, you move back to the previous level each time the button is pressed. Press the button three times and you are back at the main level menu. The display will read:

```
SELECT MODE
EXPLORE ↑↓
```

SCROLL UP or SCROLL DOWN to select

```
SELECT MODE
SKY TOUR ↑↓.
```

Press ENTER.

This mode will take you through the best and brightest objects for each month. If you have done the ALIGN EARTH alignment and entered the date, it will automatically take you to the current month. Don't know what some of these obscure objects and abbreviations mean? Just press the ENTER key for more information.

Press the BACK button until you get back to the main menu:

```
SELECT MODE
SKY TOUR ↑↓.
```

SCROLL UP or SCROLL DOWN until the display reads:

```
SELECT MODE
IDENTIFY ↑↓
```

PRESS ENTER

This mode will default to the level

```
IDENTIFY ANY
```

By selecting this option with the ENTER key, it will IDENTIFY the object that you are currently viewing OR the closest object to where your telescope is currently pointed. You also have the options to choose other types of IDENTIFY menus. These will IDENTIFY the closest CLUSTERS, NEBULAS, etc. to your current telescope position.

To select the final mode press ENTER at the display:

```
SELECT MODE
TELESCOPE ↑↓
```

The display reads something like:

```
RA18:53 DEC+38.7
AZ280 ALT+62 LVR
```

The TELESCOPE mode gives you dynamic real-time information on your telescope's current position in terms of astronomical coordinates. Play around with this mode by moving the telescope around. Notice the three letter abbreviation in the lower right portion of the display. This dynamically displays the current CONSTELLATION that the telescope is pointing at. These names are abbreviated in this mode. Definitions for the abbreviations will be in the catalog index.

# CATALOG INDEX

## CONSTELLATION ABBREVIATIONS

|                        |                           |
|------------------------|---------------------------|
| Andromeda (And)        | Lacerta (Lac)             |
| Antila (Ant)           | Leo (Leo)                 |
| Apus (Aps)             | Leo Minor (LMi)           |
| Aquarius (Aqr)         | Lepus (Lep)               |
| Aquila (Aql)           | Libra (Lib)               |
| Ara (Ara)              | Lupus (Lup)               |
| Aries (Ari)            | Lynx (Lyn)                |
| Auriga (Aur)           | Lyra (Lyr)                |
| Bootes (Boo)           | Mensa (Men)               |
| Caelum (Cae)           | Microscopium (Mic)        |
| Camelopardis (Cam)     | Monoceros (Mon)           |
| Cancer (Cnc)           | Musca (Mus)               |
| Canes Venatici (CVn)   | Norma (Nor)               |
| Canis Major (CMa)      | Octans (Oct)              |
| Canis Minor (CMi)      | Ophiuchus (Oph)           |
| Capricornus (Cap)      | Orion (Ori)               |
| Carina (Car)           | Pavo (Pav)                |
| Cassiopeia (Cas)       | Pegasus (Peg)             |
| Centaurus (Cen)        | Perseus (Per)             |
| Cepheus (Cep)          | Phoenix (Phe)             |
| Cetus (Cet)            | Pictor (Pic)              |
| Chameleon (Cha)        | Pisces (Psc)              |
| Circinus (Cir)         | Piscis Austrinus (PsA)    |
| Columbia (Col)         | Puppis (Pup)              |
| Coma Berenices (Com)   | Pyxis (Pyx)               |
| Corona Australis (CrA) | Reticulum (Ret)           |
| Corona Borealis (CrB)  | Sagitta (Sge)             |
| Corvus (Crv)           | Sagittarius (Sgr)         |
| Crater (Crt)           | Scorpius (Sco)            |
| Crux (Cru)             | Sculptor (Scl)            |
| Cygnus (Cyg)           | Scutum (Sct)              |
| Delphinus (Del)        | Serpens (Ser)             |
| Dorado (Dor)           | Sextans (Sex)             |
| Draco (Dra)            | Taurus (Tau)              |
| Equuleus (Equ)         | Telescopium (Tel)         |
| Eridanus (Eri)         | Triangulum (Tri)          |
| Fornax (For)           | Triangulum Australe (TrA) |
| Gemini (Gem)           | Tucana (Tuc)              |
| Grus (Gru)             | Ursa Major (UMa)          |
| Hercules (Her)         | Ursa Minor (UMi)          |
| Horologium (Hor)       | Vela (Vel)                |
| Hydra (Hya)            | Virgo (Vir)               |
| Hydrus (Hyi)           | Volcans (Vol)             |
| Indus (Ind)            | Vulpecula (Vul)           |

|      |                 |          |         |       |      |      |     |  |
|------|-----------------|----------|---------|-------|------|------|-----|--|
| M059 |                 | NGC 4621 | 12 42.0 | +11.7 | 9.8  | 2'   | Vir | elongated galaxy with bright core                |
| M060 |                 | NGC 4649 | 12 43.7 | +11.6 | 8.8  | 3.5' | Vir | round galaxy with bright core                    |
| M061 |                 | NGC 4303 | 12 21.9 | +04.5 | 9.7  | 5'   | Vir | spiral galaxy structure                          |
| M062 |                 | NGC 6266 | 17 01.2 | -30.1 | 6.5  | 9'   | Oph | globular cluster                                 |
| M063 | Sunflower       | NGC 5055 | 13 15.8 | +42.0 | 8.6  | 9'   | Cvn | elongated galaxy with bright core                |
| M064 | Black eye       | NGC 4826 | 12 56.7 | +21.7 | 8.6  | 7.5' | Com | elongated galaxy dusty                           |
| M065 | Leo triplet     | NGC 3623 | 11 18.9 | +13.1 | 9.3  | 10'  | Leo | very elongated galaxy with bright core           |
| M066 | Leo triplet     | NGC 3627 | 11 20.2 | +13.0 | 9    | 9'   | Leo | spiral galaxy structure                          |
| M067 |                 | NGC 2682 | 08 50.4 | +11.8 | 7    | 30'  | Cnc | open cluster dense                               |
| M068 |                 | NGC 4590 | 12 39.5 | -26.8 | 8    | 9'   | Hya | globular cluster highly resolved                 |
| M069 |                 | NGC 6637 | 18 31.4 | -32.4 | 7.5  | 4'   | Sgr | globular cluster                                 |
| M070 |                 | NGC 6681 | 18 43.2 | -32.3 | 8    | 4'   | Sgr | globular cluster                                 |
| M071 |                 | NGC 6838 | 19 53.8 | +18.8 | 9    | 6'   | Sge | globular cluster highly resolved                 |
| M072 |                 | NGC 6981 | 20 53.5 | -12.5 | 8.6  | 3'   | Aqr | globular cluster                                 |
| M073 |                 | NGC 6994 | 20 59.0 | -12.6 | 8.9  | ?    | Aqr | asterism   |
| M074 |                 | NGC 628  | 01 36.7 | +15.8 | 9.2  | 10'  | Psc | spiral galaxy structure                          |
| M075 |                 | NGC 6864 | 20 06.1 | -21.9 | 8    | 3'   | Sgr | globular cluster unresolved                      |
| M076 | little dumbbell | NGC 650  | 01 42.4 | +51.6 | 10.1 | 2'   | Per | planetary nebula irregular                       |
| M077 |                 | NGC 1068 | 02 42.7 | -0.1  | 8.8  | 7'   | Cet | round galaxy with bright core                    |
| M078 |                 | NGC 2068 | 05 46.7 | +00.1 | 8    | 8'   | Ori | reflection nebula bright                         |
| M079 |                 | NGC 1904 | 05 24.5 | -24.6 | 8.4  | 7.5' | Lep | globular cluster highly resolved                 |
| M080 |                 | NGC 6093 | 16 17.0 | -23   | 7.2  | 9'   | Sco | globular cluster mottled                         |
| M081 | Bodes nebula    | NGC 3031 | 09 55.6 | +69.1 | 6.9  | 26'  | Uma | spiral galaxy structure                          |
| M082 |                 | NGC 3034 | 09 55.8 | +69.7 | 8.4  | 9'   | Uma | very elongated galaxy with dust and bright knots |
| M083 |                 | NGC 5236 | 13 37.0 | -29.9 | 8    | 10'  | Hya | barred spiral galaxy structure                   |
| M084 |                 | NGC 4374 | 12 25.1 | +12.9 | 9.3  | 4'   | Vir | round galaxy with bright core                    |
| M085 |                 | NGC 4382 | 12 25.4 | +18.2 | 9.3  | 5'   | Com | round galaxy with bright core                    |
| M086 |                 | NGC 4406 | 12 26.2 | +13.0 | 9.2  | 7'   | Vir | round galaxy with bright core                    |
| M087 |                 | NGC 4486 | 12 30.8 | +12.4 | 8.6  | 7'   | Vir | round galaxy with bright core                    |
| M088 |                 | NGC 4501 | 12 32.0 | +14.4 | 9.5  | 6'   | Com | very elongated galaxy with bright core           |
| M089 |                 | NGC 4552 | 12 35.7 | +12.6 | 9.8  | 3'   | Vir | round galaxy with bright core                    |
| M090 |                 | NGC 4569 | 12 36.8 | +13.2 | 9.5  | 9'   | Vir | very elongated galaxy with bright core           |
| M091 |                 | NGC 4548 | 12 35.4 | +14.5 | 10.2 | 4.5' | Com | elongated galaxy with bright core                |
| M092 |                 | NGC 6341 | 17 17.1 | +43.1 | 6.5  | 8'   | Her | globular cluster highly resolved                 |
| M093 |                 | NGC 2447 | 07 44.6 | -23.9 | 6.2  | 20'  | Pup | open cluster dense                               |
| M094 |                 | NGC 4736 | 12 50.9 | +41.1 | 8.2  | 5'   | Cvn | elongated galaxy with bright core                |
| M095 |                 | NGC 3351 | 10 44.0 | +11.7 | 9.7  | 4'   | Leo | barred spiral galaxy structure                   |
| M096 |                 | NGC 3368 | 10 46.8 | +11.8 | 9.3  | 6'   | Leo | round galaxy with bright core                    |
| M097 | Owl             | NGC 3587 | 11 14.8 | +55.0 | 11   | 2.5' | Uma | planetary nebula irregular                       |
| M098 |                 | NGC 4192 | 12 13.8 | +14.9 | 10   | 8.2' | Com | very elongated galaxy with bright core           |
| M099 |                 | NGC 4254 | 12 18.8 | +14.4 | 10   | 5'   | Com | spiral galaxy structure                          |
| M100 |                 | NGC 4321 | 12 22.9 | +15.8 | 9.4  | 7'   | Com | round galaxy with bright core                    |
| M101 |                 | NGC 5457 | 14 03.2 | +54.4 | 7.8  | 20'  | Uma | spiral galaxy structure with bright knots        |
| M102 |                 | NGC 5866 | 15 06.5 | +55.8 | 10   | 3'   | Dra | very elongated galaxy dusty with bright core     |
| M103 |                 | NGC 581  | 01 33.2 | +60.7 | 7.4  | 6'   | Cas | open cluster rich                                |
| M104 | sombrero        | NGC 4594 | 12 40.0 | -11.6 | 8.2  | 7'   | Vir | edge on galaxy dusty                             |
| M105 |                 | NGC 3379 | 10 47.8 | +12.6 | 9.3  | 4'   | Leo | round galaxy with bright core                    |
| M106 |                 | NGC 4258 | 12 19.0 | +47.3 | 8.3  | 18'  | Cvn | spiral galaxy structure with bright knots        |
| M107 |                 | NGC 6171 | 16 32.5 | -13.1 | 9    | 7'   | Oph | globular cluster                                 |
| M108 |                 | NGC 3556 | 11 11.5 | +55.7 | 10.1 | 8'   | Uma | very elongated galaxy with dust and bright knots |
| M109 |                 | NGC 3992 | 11 57.6 | +53.4 | 9.8  | 8'   | Uma | elongated galaxy with bright core                |
| M110 |                 | NGC 205  | 00 40.4 | +41.7 | 8    | 17'  | And | elongated galaxy                                 |

## STAR CATALOG

| STAR CATALOG | NAME                 | RA                          | DEC    | MAG | SIZE           | CON | DESCRIPTION           |
|--------------|----------------------|-----------------------------|--------|-----|----------------|-----|-----------------------|
| ST001        | O $\Sigma\Sigma$ 254 | 00 01.2                     | +60 21 | 7.6 | 59"            | Cas | colored double star   |
| ST002        | 30                   | 30 PSC 00 02.0              | -6     | 4.4 | *              | Psc | red variable star     |
| ST003        | $\Sigma$ 3053        | 00 02.6                     | +66 06 | 5.9 | 15"            | Cas | colored double star   |
| ST004        | SU                   | SU AND 00 04.6              | +43.5  | 8   | *              | And | red variable star     |
| ST005        | Ced214               | Cederblad 21400 04.7        | +67.2  | 7.8 | 30'            | Cep | emission nebula       |
| ST006        | $\Sigma$ 3062        | ADS 61 00 06.3              | +58.4  | 6.4 | 1.5"           | Cas | double star challenge |
| ST007        | Alpheratz            | Alpha And 00 08.4           | +29 05 | 2.1 | *              | And | star                  |
| ST008        | $\Sigma$ 2           | Struve 2 00 09.3            | +79.7  | 6.6 | 0.8"           | Cep | double star challenge |
| ST009        | Kappa                | $\beta$ 391 00 09.4         | -28 00 | 6.2 | 2"             | ScI | double star challenge |
| ST010        | Algenib              | Gamma PEG 00 13.2           | +15.2  | 2.8 | *              | Peg | star                  |
| ST011        | AD                   | AD Cet 00 14.5              | -7.8   | 4.9 | 1.5 $^{\circ}$ | Cet | red variable star     |
| ST012        | 7                    | 7 CET 00 14.6               | -18.9  | 4.4 | *              | Cet | red variable star     |
| ST013        | 35 Psc               | $\Sigma$ 12, UU Psc 00 15.0 | +08 49 | 5.8 | 12"            | Psc | colored double star   |
| ST014        | S                    | S SCL 00 15.4               | -32.1  | 5.5 | *              | ScI | variable star         |
| ST015        | $\Sigma$ 13          | Struve 13 00 16.2           | +76.9  | 7   | 0.9"           | Cep | double star challenge |
| ST016        | ST                   | ST CAS 00 17.6              | +50.3  | 9   | *              | Cas | red variable star     |
| ST017        | Groombridge34        | Groombridge 34 00 18.1      | +44.0  | 8   | 39"            | And | double star           |
| ST018        | $\Sigma$ 24          | 00 18.5                     | +26 08 | 7.6 | 5"             | And | double star           |

|       |            |              |         |        |     |         |     |                                |
|-------|------------|--------------|---------|--------|-----|---------|-----|--------------------------------|
| ST094 | pi         |              | 02 49.3 | +17 28 | 5.2 | 3"      | Ari | triple star                    |
| ST095 | Eta        | Σ307         | 02 50.7 | +55 53 | 3.9 | 28"     | Per | double star magnitude contrast |
| ST096 | R          | R HOR        | 02 53.9 | -49.9  | 4.7 | *       | Hor | variable star                  |
| ST097 | Σ330       | Struve 330   | 02 57.2 | -0.6   | 7.3 | 9"      | Cet | double star                    |
| ST098 | Acamar     | Theta ERI    | 02 58.3 | -40.3  | 3.5 | 8"      | Eri | double star                    |
| ST099 | Epsilon    | Epsilon ARI  | 02 59.2 | +29.3  | 4.6 | 1.4"    | Ari | double star challenge          |
| ST100 | Epsilon    |              | 02 59.2 | +21 20 | 4.6 | 1"      | Ari | double star challenge          |
| ST101 | Σ331       |              | 03 00.8 | +52 20 | 5.4 | 12"     | Per | double star                    |
| ST102 | Menkar     | Alpha CET    | 03 02.3 | +04.1  | 2.5 | *       | Cet | star                           |
| ST103 | Rho        | Rho PER      | 03 05.2 | +38.8  | 3.4 | *       | Per | red variable star              |
| ST104 | Σ320       |              | 03 06.2 | +79 24 | 5.8 | 5"      | Cep | colored double star            |
| ST105 | h3568      | h3568        | 03 07.5 | -79    | 5.6 | 15"     | Hyi | double star                    |
| ST106 | Algol      | Beta PER     | 03 08.2 | +41.0  | 2.2 | *       | Per | variable star                  |
| ST107 | Alpha      | Alpha FOR    | 03 12.1 | -29    | 4   | 5"      | For | double star                    |
| ST108 | h3556      | h3556        | 03 12.4 | -44.4  | 6   | 3.5"    | Eri | double star                    |
| ST109 | Σ362       |              | 03 16.3 | +60 02 | 8.5 | 7"      | Cam | double star equal magnitude    |
| ST110 | Σ369       |              | 03 17.2 | +40 29 | 6.7 | 3"      | Per | colored double star            |
| ST111 | ADS2446    | ADS 2446     | 03 17.7 | +38.6  | 7.8 | 0.9"    | Per | double star challenge          |
| ST112 | Zeta       | Zeta RET     | 03 18.2 | -62.5  | 5.2 | 5'      | Ret | double star                    |
| ST113 | Tau4       | Tau4 ERI     | 03 19.5 | -21.8  | 3.7 | *       | Eri | star                           |
| ST114 | Toms Topaz | Tom's Topaz  | 03 20.3 | +29.0  | 4.5 | 9°      | Ari | star                           |
| ST115 | Mirfak     | Alpha Per    | 03 24.3 | +49 52 | 1.8 | *       | Per | star                           |
| ST116 | Y          | Y PER        | 03 27.7 | +44.2  | 8.1 | *       | Per | variable star                  |
| ST117 | Σ394       |              | 03 28.0 | +20 27 | 7.1 | 7"      | Ari | double star                    |
| ST118 | Σ385       | Struve 385   | 03 29.1 | +59.9  | 4.2 | 2.4"    | Cam | double star                    |
| ST119 | Σ389       |              | 03 30.1 | +59 21 | 6.5 | 2.7"    | Cam | double star                    |
| ST120 | Sigma      | Sigma PER    | 03 30.6 | +48.0  | 4.4 | *       | Per | star                           |
| ST121 | Σ401       |              | 03 31.3 | +27 34 | 6.4 | 11"     | Tau | double star equal magnitude    |
| ST122 | Epsilon    | Epsilon ERI  | 03 32.9 | -9.5   | 3.7 | *       | Eri | star                           |
| ST123 | Σ400       | Struve 400   | 03 35.0 | +60.0  | 6.8 | 1.4"    | Cam | double star                    |
| ST124 | OΣ36       | O.Struve 36  | 03 40.0 | +63.9  | 6.8 | 46"     | Cam | double star                    |
| ST125 | U1         | U(1) CAM (?) | 03 41.6 | +62.6  | 8.1 | 0       | Cam | variable star                  |
| ST126 | Omicron    | Omicron PER  | 03 44.3 | +32.3  | 3.8 | 0       | Per | star                           |
| ST127 | Pi         | Pi ERI       | 03 46.1 | -12.1  | 4.4 | *       | Eri | red variable star              |
| ST128 | Gamma      | Gamma HYI    | 03 47.2 | -74.2  | 3.2 | *       | Hyi | star                           |
| ST129 | 30         | 30 TAU       | 03 48.3 | +11.2  | 5   | 9"      | Tau | double star                    |
| ST130 | F          | Δ 16         | 03 48.6 | -37 37 | 4.9 | 8"      | Eri | double star equal magnitude    |
| ST131 | BE         | BE CAM       | 03 49.5 | +65.5  | 4.5 | *       | Cam | star                           |
| ST132 | Atik       | Zeta PER     | 03 54.1 | +31.9  | 2.9 | *       | Per | star                           |
| ST133 | 32         | 32 ERI       | 03 54.3 | -3     | 5   | 7"      | Eri | colored double star            |
| ST134 | Epsilon    |              | 03 57.9 | +40 01 | 2.9 | 9"      | Per | double star magnitude contrast |
| ST135 | Gamma      | Gamma ERI    | 03 58.0 | -13.5  | 3   | *       | Eri | star                           |
| ST136 | Lambda     | Lambda TAU   | 04 00.7 | +12.5  | 3.3 | *       | Tau | variable star                  |
| ST137 | OΣ531      | ADS 2995     | 04 07.6 | +38.1  | 7.4 | 1.4"    | Per | double star challenge          |
| ST138 | SZ         | Σ485         | 04 07.8 | +62 20 | 7   | 90"     | Cam | double star                    |
| ST139 | Omicron2   | Omicron2 ERI | 04 15.2 | -7.7   | 4.5 | 83"     | Eri | triple star challenge          |
| ST140 | Epsilon    | Epsilon RET  | 04 16.5 | -59.3  | 4.4 | *       | Ret | star                           |
| ST141 | Theta      | Theta RET    | 04 17.7 | -63.3  | 6.2 | 4"      | Ret | double star                    |
| ST142 | Phi        | Phi TAU      | 04 20.4 | +27.4  | 5   | 52"     | Tau | double star                    |
| ST143 | T          |              | 04 22.0 | +19 32 | 8.4 | Stellar | Tau | variable star                  |
| ST144 | Chi        | Chi TAU      | 04 22.6 | +25.6  | 5.5 | 19.4"   | Tau | double star                    |
| ST145 | ADS3169    | ADS 3169     | 04 22.7 | +15.1  | 7.3 | 1.4"    | Tau | double star challenge          |
| ST146 | 43         | 43 ERI       | 04 24.0 | -34    | 4   | *       | Eri | red variable star              |
| ST147 | β 184      |              | 04 27.9 | -21 30 | 7.3 | 1.7"    | Eri | double star challenge          |
| ST148 | Σ552       |              | 04 31.4 | +40 01 | 7   | 9"      | Per | double star equal magnitude    |
| ST149 | 1          |              | 04 32.0 | +53 55 | 5.4 | 10"     | Cam | colored double star            |
| ST150 | Σ559       |              | 04 33.5 | +18 01 | 6.9 | 3"      | Tau | double star equal magnitude    |
| ST151 | 46         | 46 ERI       | 04 33.9 | -6.7   | 5.7 | 4'      | Eri | double star                    |
| ST152 | Aldebaran  | Alpha TAU    | 04 35.9 | +16.5  | 0.9 | 30"     | Tau | colored double star            |
| ST153 | Nu         | Nu ERI       | 04 36.3 | -3.4   | 3.9 | 11°     | Eri | star                           |
| ST154 | 53         | 53 ERI       | 04 38.2 | -14.3  | 3.9 | *       | Eri | star                           |
| ST155 | Σ572       |              | 04 38.5 | +26 56 | 7.3 | 4"      | Tau | double star equal magnitude    |
| ST156 | 54         | 54 ERI       | 04 40.4 | -19.7  | 4.3 | *       | Eri | red variable star              |
| ST157 | R          | R CAE        | 04 40.5 | -38.2  | 6.7 | *       | Cae | variable star                  |
| ST158 | 55         | Σ590         | 04 43.6 | -08 48 | 6.7 | 9"      | Eri | double star equal magnitude    |
| ST159 | Iota       | Iota PIC     | 04 50.9 | -53.5  | 5.6 | 12"     | Pic | double star                    |
| ST160 | ST         |              | 04 51.2 | +68 10 | 9.2 | Stellar | Cam | red variable star              |
| ST161 | Pi4        | Pi4 ORI      | 04 51.2 | +05.6  | 3.7 | *       | Ori | star                           |
| ST162 | TT         | TT TAU       | 04 51.6 | +28.5  | 8   | *       | Tau | variable star                  |
| ST163 | Pi5        | Pi5 ORI      | 04 54.2 | +02.4  | 3.7 | *       | Ori | star                           |
| ST164 | Omicron2   | Omicron2 ORI | 04 56.4 | +13.5  | 4.1 | *       | Ori | star                           |
| ST165 | Iota       | Iota AUR     | 04 57.0 | +33.2  | 2.7 | *       | Aur | star                           |
| ST166 | Pi6        | Pi6 ORI      | 04 58.5 | +01.7  | 4.5 | *       | Ori | star                           |
| ST167 | Omega      | Omega AUR    | 04 59.3 | +37.9  | 5   | 5.4"    | Aur | double star                    |

|       |           |                  |         |         |       |         |     |                                |
|-------|-----------|------------------|---------|---------|-------|---------|-----|--------------------------------|
| ST243 | BL        | BL ORI           | 06 25.5 | +14.7   | 8.5   | *       | Ori | variable star                  |
| ST244 | 15        |                  | 06 27.8 | +20 47  | 6.6   | 27"     | Gem | double star                    |
| ST245 | Beta      |                  | 06 28.8 | -07 02  | 3.8   | 3"      | Mon | triple star                    |
| ST246 | ADS5150   | ADS 5150         | 06 31.8 | +38.9   | 11.5  | 4.5"    | Aur | double star                    |
| ST247 | 20        | 20 GEM           | 06 32.3 | +17.8   | 6.3   | 20"     | Gem | colored double star            |
| ST248 | ADS5188   | ADS 5188         | 06 34.3 | +38.1   | 6.7   | 43"     | Aur | double star                    |
| ST249 | CR        | CR GEM           | 06 34.4 | +16.1   | 8.5   | *       | Gem | variable star                  |
| ST250 | Σ928      | ADS 5191         | 06 34.7 | +38.4   | 7.6   | 3.5"    | Aur | double star                    |
| ST251 | ADS5201   | ADS 5201         | 06 35.1 | +37.1   | 7.4   | 2.6"    | Aur | double star                    |
| ST252 | Σ929      | ADS 5208         | 06 35.4 | +37.7   | 7.4   | 6"      | Aur | double star                    |
| ST253 | Σ939      | Struve 939       | 06 35.9 | +05.3   | 8.3   | 30"     | Mon | double star                    |
| ST254 | ADS5221   | ADS 5221         | 06 36.2 | +38.0   | 8.5   | 1.3"    | Aur | double star challenge          |
| ST255 | Nu1       | Nu1 CMA          | 06 36.4 | -18.7   | 6     | 17.5"   | Cma | colored double star            |
| ST256 | UU        | UU AUR           | 06 36.5 | +38.5   | 5.1   | *       | Aur | variable star                  |
| ST257 | ADS5240   | ADS 5240         | 06 36.9 | +38.2   | 9.7   | 2.2"    | Aur | double star                    |
| ST258 | ADS5245   | ADS 5245         | 06 37.3 | +38.4   | 8.8   | 10"     | Aur | double star                    |
| ST259 | South529  | South 529        | 06 37.6 | +12.2   | 7.6   | 70"     | Gem | double star                    |
| ST260 | Innes5    | Innes 5          | 06 38.0 | -61.5   | 6.4   | 2.4"    | Pic | double star                    |
| ST261 | ADS5265   | ADS 5265         | 06 38.4 | +38.8   | 9.6   | 4.6"    | Aur | double star                    |
| ST262 | Innes1156 | Innes 1156       | 06 39.1 | -29.1   | 8     | 0.7"    | Cma | double star challenge          |
| ST263 | SAO172106 | SAO 172106       | 06 39.5 | -30     | 7.8   | 2.5°    | Cma | red variable star              |
| ST264 | Σ953      |                  | 06 41.2 | +08 59  | 7.1   | 7"      | Mon | double star                    |
| ST265 | VW        | VW GEM           | 06 42.2 | +31.5   | 8.7   | *       | Gem | variable star                  |
| ST266 | Sirius    | Alpha CMA        | 06 45.1 | -16.7   | -1    | 9"      | Cma | double star magnitude contrast |
| ST267 | 12        | Σ948             | 06 46.2 | +59 27  | 4.9   | 2"      | Lyn | triple star challenge          |
| ST268 | Σ958      |                  | 06 48.2 | +55 42  | 5.5   | 5"      | Lyn | double star equal magnitude    |
| ST269 | Kappa     | Kappa CMA        | 06 49.8 | -32.5   | 4     | *       | Cma | star                           |
| ST270 | 14        | 14 LYN           | 06 53.1 | +59.5   | 5.7   | 0.4"    | Lyn | double star challenge          |
| ST271 | GY        | GY MON           | 06 53.2 | -4.6    | 9.4   | *       | Mon | variable star                  |
| ST272 | Σ987      |                  | 06 54.1 | -05 51  | 7.1   | 1.3"    | Mon | double star challenge          |
| ST273 | Omicron1  | Omicron1 CMA     |         | 06 54.1 | -24.2 | 3.9     | *   | Cma star                       |
| ST274 | Theta     | Theta CMA        | 06 54.2 | -12     | 4.1   | *       | Cma | star                           |
| ST275 | 38        |                  | 06 54.6 | +13 11  | 4.7   | 7"      | Gem | colored double star            |
| ST276 | Mu        | Σ997             | 06 56.1 | -14 02  | 5.3   | 2.8"    | Cma | double star magnitude contrast |
| ST277 | BG        | BG MON           | 06 56.4 | +07.1   | 9.2   | *       | Mon | variable star                  |
| ST278 | OΣ80      | O. Struve (P) 80 |         | 06 58.1 | +14.2 | 7.3     | 2'  | Gemasterism                    |
| ST279 | RV        | RV MON           | 06 58.4 | +06.2   | 7     | *       | Mon | variable star                  |
| ST280 | Epsilon   | Epsilon CMA      | 06 58.6 | -29     | 1.5   | 7.5"    | Cma | double star                    |
| ST281 | Sigma     | Sigma CMA        | 07 01.7 | -27.9   | 3.5   | *       | Cma | star                           |
| ST282 | Omicron2  | Omicron2 CMA     |         | 07 03.0 | -23.8 | 3       | *   | Cma star                       |
| ST283 | Dunlop38  | Dunlop 38        | 07 04.0 | -43.6   | 5.6   | 20.5"   | Pup | double star                    |
| ST284 | Zeta      | Zeta GEM         | 07 04.1 | +20.6   | 3.7   | *       | Gem | variable star                  |
| ST285 | Σ1009     |                  | 07 05.7 | +52 45  | 6.9   | 4.1"    | Lyn | double star equal magnitude    |
| ST286 | R         | R GEM            | 07 07.4 | +22.7   | 6     | *       | Gem | variable star                  |
| ST287 | W         |                  | 07 08.1 | -11 55  | 6.4   | Stellar | CMA | red variable star              |
| ST288 | Gamma     | Gamma VOL        | 07 08.8 | -70.5   | 4     | 13.6"   | Vol | double star                    |
| ST289 | Tau       | Tau GEM          | 07 11.1 | +30.2   | 4.4   | 1.9"    | Gem | double star                    |
| ST290 | Σ1035     |                  | 07 12.0 | +22 17  | 8.2   | 4"      | Gem | double star equal magnitude    |
| ST291 | Σ1037     | Struve 1037      | 07 12.8 | +27.2   | 7.2   | 1.3"    | Gem | double star challenge          |
| ST292 | Omega     | Omega CMA        | 07 14.8 | -26.8   | 3.9   | *       | Cma | star                           |
| ST293 | h3945     |                  | 07 16.6 | -23 19  | 4.5   | 27"     | CMA | colored double star            |
| ST294 | Tau       | h 3948           | 07 18.7 | -24 57  | 4.4   | 15"     | CMA | triple star                    |
| ST295 | Delta     | 55 Gem           | 07 20.1 | +21 59  | 3.5   | 6"      | Gem | double star magnitude contrast |
| ST296 | 19        | Σ1062            | 07 22.9 | +55 17  | 5.6   | 15"     | Lyn | triple star                    |
| ST297 | Gamma     | Gamma CMI        | 07 28.2 | +08.9   | 4.3   | *       | Cmi | star                           |
| ST298 | Sigma     | Sigma PUP        | 07 29.2 | -43.3   | 3.3   | 22"     | Pup | double star                    |
| ST299 | Σ1093     | Struve 1093      | 07 30.3 | +50.0   | 8.8   | 0.8"    | Lyn | double star challenge          |
| ST300 | n         | HN19, h269       | 07 34.3 | -23 28  | 5.1   | 10"     | Pup | double star equal magnitude    |
| ST301 | Castor    | Alpha GEM        | 07 34.6 | +31.9   | 2     | 1.8"    | Gem | double star challenge          |
| ST302 | Upsilon   | Upsilon GEM      | 07 35.9 | +26.9   | 4.1   | 2.5°    | Gem | red variable star              |
| ST303 | Σ1121     |                  | 07 36.6 | -14 29  | 7.9   | 7"      | Pup | double star equal magnitude    |
| ST304 | K         |                  | 07 38.8 | -26 48  | 3.8   | 10"     | Pup | double star equal magnitude    |
| ST305 | Procyon   | Alpha CMi        | 07 39.3 | +05 14  | 0.4   | Stellar | CMi | star                           |
| ST306 | Kappa     | OΣ179            | 07 44.4 | +24 23  | 3.7   | 7"      | Gem | double star magnitude contrast |
| ST307 | 2         | Σ1138            | 07 45.5 | -14 41  | 6.1   | 17"     | Pup | double star equal magnitude    |
| ST308 | Σ1127     |                  | 07 47.0 | +64 03  | 7     | 5"      | Cam | triple star                    |
| ST309 | Σ1149     |                  | 07 49.4 | +03 13  | 7.9   | 22"     | Cmi | double star                    |
| ST310 | U         |                  | 07 55.1 | +22 00  | 8.2   | Stellar | Gem | variable star                  |
| ST311 | Chi       | Chi CAR          | 07 56.8 | -53     | 3.5   | 4°      | Car | star                           |
| ST312 | Dunlop59  | Dunlop 59        | 07 59.2 | -50     | 6.5   | 16"     | Pup | double star                    |
| ST313 | S-h86     | S-h 86           | 08 02.5 | +63.1   | 6     | 49"     | Cam | double star                    |
| ST314 | Zeta      | Zeta PUP         | 08 03.6 | -40     | 2.3   | 4°      | Pup | star                           |
| ST315 | RT        | RT PUP           | 08 05.4 | -38.8   | 8.5   | *       | Pup | variable star                  |
| ST316 | RU        | RU PUP           | 08 07.5 | -22.9   | 8.9   | *       | Pup | variable star                  |

|       |                |               |         |        |      |         |     |                                |
|-------|----------------|---------------|---------|--------|------|---------|-----|--------------------------------|
| ST392 | Rho            | Rho LEO       | 10 32.8 | +09.3  | 3.9  | *       | Leo | star                           |
| ST393 | 49             |               | 10 35.0 | +08 39 | 5.7  | 2"      | Leo | double star challenge          |
| ST394 | U              | U ANT         | 10 35.2 | -39.6  | 8.1  | *       | Ant | variable star                  |
| ST395 | Gamma          | Gamma CHA     | 10 35.5 | -78.6  | 4.1  | *       | Cha | star                           |
| ST396 | U              | U HYA         | 10 37.6 | -13.4  | 7    | *       | Hya | variable star                  |
| ST397 | Dunlop95       | Dunlop 95     | 10 39.3 | -55.6  | 4.3  | 52"     | Vel | double star                    |
| ST398 | 35             | $\Sigma$ 1466 | 10 43.4 | +04 44 | 6.3  | 7"      | Sex | double star                    |
| ST399 | R              | R UMA         | 10 44.6 | +68.8  | 7.5  | *       | Uma | variable star                  |
| ST400 | VY             | VY UMA        | 10 45.1 | +67.4  | 5.9  | *       | Uma | variable star                  |
| ST401 | Delta          | Delta CHA     | 10 45.8 | -80.5  | 4.5  | 4.5'    | Cha | double star                    |
| ST402 | 40             | $\Sigma$ 1476 | 10 49.3 | -04 01 | 6.9  | 2.5"    | Sex | double star                    |
| ST403 | Nu             | Nu HYA        | 10 49.6 | -16.2  | 3.1  | *       | Hya | star                           |
| ST404 | 54             | 54 LEO        | 10 55.6 | +24.8  | 4.5  | 6.8"    | Leo | double star                    |
| ST405 | SAO251342      | SAO 251342    | 11 17.5 | -63.5  | 7    | 7"      | Car | double star magnitude contrast |
| ST406 | Xi             | Xi UMA        | 11 18.2 | +31.5  | 4.5  | 1.3"    | Uma | double star challenge          |
| ST407 | Nu             | Nu UMA        | 11 18.5 | +33.1  | 3.5  | 7"      | Uma | double star                    |
| ST408 | $\Sigma$ 1529  |               | 11 19.4 | -01 38 | 7    | 10"     | Leo | double star                    |
| ST409 | h4432          | h4432         | 11 23.4 | -65    | 5.1  | 2.3"    | Mus | double star                    |
| ST410 | Iota           | Iota LEO      | 11 23.9 | +10.5  | 4    | 1.3"    | Leo | double star challenge          |
| ST411 | 83             | $\Sigma$ 1540 | 11 26.8 | +03 00 | 6.2  | 29"     | Leo | triple star                    |
| ST412 | Tau            | Tau LEO       | 11 27.9 | +02.9  | 5.5  | 1.5'    | Leo | double star                    |
| ST413 | Lambda         | Lambda DRA    | 11 31.4 | +69.3  | 3.8  | 20'     | Dra | red variable star              |
| ST414 | 88             | $\Sigma$ 1547 | 11 31.8 | +14 21 | 6.4  | 16"     | Leo | double star                    |
| ST415 | N              |               | 11 32.3 | -29 16 | 5.8  | 9"      | Hyd | double star equal magnitude    |
| ST416 | Innes78        | Innes 78      | 11 33.6 | -40.6  | 6    | 1"      | Cen | double star challenge          |
| ST417 | $\Sigma$ 1552  | $\Sigma$ 1552 | 11 34.7 | +16 48 | 6    | 3"      | Leo | triple star                    |
| ST418 | Nu             | Nu VIR        | 11 45.9 | +06.5  | 4    | *       | Vir | star                           |
| ST419 | Denebola       | Beta Leo      | 11 49.1 | +14 34 | 2.1  | Stellar | Leo | star                           |
| ST420 | Beta           | Beta HYA      | 11 52.9 | -33.9  | 4.7  | 0.9"    | Hya | colored double star            |
| ST421 | O $\Sigma$ 112 | O.Struve 112  | 11 54.6 | +19.4  | 8.4  | 73"     | Leo | double star                    |
| ST422 | 65             | $\Sigma$ 1579 | 11 55.1 | +46 29 | 6.7  | 4"      | Uma | double star                    |
| ST423 | Epsilon        | Epsilon CHA   | 11 59.6 | -78.2  | 5.4  | 0.9"    | Cha | colored double star            |
| ST424 | $\Sigma$ 1593  |               | 12 03.5 | -02 26 | 8.7  | 1.3"    | Vir | double star challenge          |
| ST425 | Zeta           | Zeta COM      | 12 04.3 | +21.5  | 6    | 3.6"    | Com | double star                    |
| ST426 | Delta          | Delta CEN     | 12 08.4 | -50.7  | 2.6  | 4.5'    | Cen | double star                    |
| ST427 | $\Sigma$ 1604  |               | 12 09.5 | -11 51 | 6.6  | 10"     | Crv | triple star                    |
| ST428 | Epsilon        | Epsilon CRV   | 12 10.1 | -22.6  | 3    | *       | Crv | star                           |
| ST429 | Rumker14       | Rumker 14     | 12 14.0 | -45.7  | 5.6  | 2.9"    | Cen | double star                    |
| ST430 | Delta          | Delta CRU     | 12 15.1 | -58.7  | 2.8  | *       | Cru | star                           |
| ST431 | 2              | 2 CVN         | 12 16.1 | +40.7  | 6    | 11.5"   | Cvn | colored double star            |
| ST432 | Epsilon        | Epsilon MUS   | 12 17.6 | -68    | 4.1  | *       | Mus | red variable star              |
| ST433 | $\Sigma$ 1627  |               | 12 18.1 | -03 56 | 6.6  | 20"     | Vir | double star equal magnitude    |
| ST434 | R              | R CRV         | 12 19.6 | -19.3  | 6.7  | *       | Crv | variable star                  |
| ST435 | $\Sigma$ 1633  |               | 12 20.6 | +27 03 | 6.3  | 9"      | Com | double star equal magnitude    |
| ST436 | Epsilon        | Epsilon CRU   | 12 21.4 | -60.4  | 3.6  | *       | Cru | star                           |
| ST437 | M40            | Winnecke 4    | 12 22.4 | +58 05 | 9    | 50"     | UMa | double star                    |
| ST438 | 17             | 17 VIR        | 12 22.5 | +05.3  | 6.5  | 21"     | Vir | double star                    |
| ST439 | $\Sigma$ 1639  | Struve 1639   | 12 24.4 | +25.6  | 6.8  | 1.6"    | Com | double star challenge          |
| ST440 | S              | S CEN         | 12 24.6 | -49.4  | 9.2  | *       | Cen | variable star                  |
| ST441 | SS             |               | 12 25.3 | +00 48 | 6    | Stellar | Vir | red variable star              |
| ST442 | Acrux          | Alpha CRU     | 12 26.6 | -63.1  | 1    | 4.4"    | Cru | double star                    |
| ST443 | 3C273          | 3C 273        | 12 29.1 | +02.0  | 12.8 | *       | Vir | asterism                       |
| ST444 | Algorab        | Delta CRV     | 12 29.9 | -16.5  | 3    | 24"     | Crv | double star                    |
| ST445 | Gamma          | Gamma CRU     | 12 31.2 | -57.1  | 1.6  | 110"    | Cru | double star                    |
| ST446 | $\Sigma$ 1649  | Struve 1649   | 12 31.6 | -11.1  | 8    | 15"     | Vir | double star                    |
| ST447 | 24             |               | 12 35.1 | +18 23 | 5    | 20"     | CVn | colored double star            |
| ST448 | Alpha          | Alpha MUS     | 12 37.2 | -69.1  | 2.7  | *       | Mus | star                           |
| ST449 | ADS8612        | ADS 8612      | 12 37.7 | -27.1  | 5.5  | 1.3"    | Hya | double star challenge          |
| ST450 | $\Sigma$ 1669  |               | 12 41.3 | -13 01 | 5.3  | 5"      | Crv | double star equal magnitude    |
| ST451 | Gamma          | Gamma CEN     | 12 41.5 | -49    | 2.2  | 1"      | Cen | double star challenge          |
| ST452 | Porrima        | Gamma VIR     | 12 41.7 | -1.4   | 3.5  | 3"      | Vir | double star                    |
| ST453 | Y              |               | 12 45.1 | +45 26 | 7.4  | Stellar | CVn | red variable star              |
| ST454 | Iota           | Iota CRU      | 12 45.6 | -61    | 4.7  | 27"     | Cru | double star                    |
| ST455 | Beta           | Beta MUS      | 12 46.3 | -68.1  | 3.7  | 1.4"    | Mus | double star challenge          |
| ST456 | Mimosa         | Beta CRU      | 12 47.7 | -59.7  | 1.3  | *       | Cru | star                           |
| ST457 | 32             | $\Sigma$ 1694 | 12 49.2 | +83 25 | 5.3  | 22"     | Cam | double star equal magnitude    |
| ST458 | 35             | $\Sigma$ 1687 | 12 53.3 | +21 14 | 5.1  | 29"     | Com | double star magnitude contrast |
| ST459 | Mu             | Mu CRU        | 12 54.6 | -57.2  | 4.3  | 35"     | Cru | double star                    |
| ST460 | Delta          | Delta VIR     | 12 55.6 | +03.4  | 3.4  | *       | Vir | red variable star              |
| ST461 | Cor Caroli     | Alpha CVN     | 12 56.0 | +38.3  | 3    | 19"     | Cvn | double star                    |
| ST462 | RY             | RY DRA        | 12 56.4 | +66.0  | 6.8  | *       | Dra | variable star                  |
| ST463 | $\Sigma$ 1699  |               | 12 58.7 | +27 28 | 8.8  | 1.5"    | Com | double star challenge          |
| ST464 | Delta          | Delta MUS     | 13 02.3 | -71.5  | 3.6  | 8'      | Mus | star                           |
| ST465 | Theta          | Theta MUS     | 13 08.1 | -65.3  | 5.7  | 5.3"    | Mus | double star                    |

|       |            |               |         |         |        |         |     |                                |
|-------|------------|---------------|---------|---------|--------|---------|-----|--------------------------------|
| ST541 | Pi         | Σ1972         | 15 29.2 | +80 26  | 6.9    | 31"     | Umi | double star                    |
| ST542 | Lal123     |               | 15 33.1 | -24 29  | 7.5    | 9"      | Lib | double star equal magnitude    |
| ST543 | Delta      | Delta SER     | 15 34.8 | +10.5   | 4      | 3.9"    | Ser | double star                    |
| ST544 | Gamma      | Gamma LUP     | 15 35.1 | -41.2   | 2.8    | *       | Lup | star                           |
| ST545 | h4788      | h4788         | 15 35.9 | -45     | 4.7    | 2.2"    | Lup | double star                    |
| ST546 | Upsilon    | Upsilon LIB   | 15 37.0 | -28.1   | 3.6    | 3"      | Lib | colored double star            |
| ST547 | Omega      | Omega LUP     | 15 38.1 | -42.6   | 4.3    | *       | Lup | red variable star              |
| ST548 | Σ1962      |               | 15 38.7 | -08 47  | 5.8    | 12"     | Lib | double star equal magnitude    |
| ST549 | Tau        | Tau LIB       | 15 38.7 | -29.8   | 3.7    | 2°      | Lib | star                           |
| ST550 | Zeta       | Zeta CRB      | 15 39.4 | +36.6   | 5      | 6.3"    | CrB | double star                    |
| ST551 | Gamma      | Gamma CRB     | 15 42.7 | +26.3   | 4.2    | 0.3"    | CrB | double star challenge          |
| ST552 | Alpha      | Alpha SER     | 15 44.3 | +06.4   | 2.7    | *       | Ser | star                           |
| ST553 | R          |               | 15 48.6 | +28 09  | 5.7    | Stellar | CrB | variable star                  |
| ST554 | Kappa      | Kappa SER     | 15 48.7 | +18.1   | 4.1    | *       | Ser | red variable star              |
| ST555 | R          | R SER         | 15 50.7 | +15.1   | 5.2    | *       | Ser | variable star                  |
| ST556 | Xi         |               | 15 56.9 | -33 58  | 5.2    | 10"     | Lup | double star                    |
| ST557 | Rho        | Rho SCO       | 15 56.9 | -29.2   | 3.9    | *       | SCO | star                           |
| ST558 | Epsilon    | Epsilon CRB   | 15 57.6 | +26.9   | 4.2    | *       | CrB | star                           |
| ST559 | Pi         | Pi SCO        | 15 58.9 | -26.1   | 2.9    | *       | SCO | star                           |
| ST560 | T          |               | 15 59.5 | +25 55  | 2      | Stellar | CrB | variable star                  |
| ST561 | Eta        | Rmk 21        | 16 00.1 | -38 24  | 3.6    | 15"     | Lup | double star magnitude contrast |
| ST562 | Delta      | Delta SCO     | 16 00.3 | -22.6   | 2.3    | *       | SCO | star                           |
| ST563 | Xi         |               | 16 04.4 | -11 22  | 4.2    | 1"      | SCO | triple star challenge          |
| ST564 | Graffias   | Beta SCO      | 16 05.4 | -19.8   | 2.5    | *       | SCO | star                           |
| ST565 | Omega1     | Omega1 SCO    | 16 06.8 | -20.7   | 4      | 14'     | SCO | star                           |
| ST566 | Kappa      |               | 16 08.1 | +17 03  | 5      | 28"     | Her | colored double star            |
| ST567 | Nu         |               | 16 12.0 | -19 28  | 4      | 1"      | SCO | quadruple star                 |
| ST568 | Delta      | Delta OPH     | 16 14.3 | -3.7    | 2.7    | *       | Oph | star                           |
| ST569 | Sigma      | Σ2032, 17 CrB |         | 16 14.7 | +33 52 | 5.2     | 7"  | CrB double star                |
| ST570 | Delta      | Delta APS     | 16 20.3 | -78.7   | 4.7    | *       | Aps | double star                    |
| ST571 | Sigma      | H 121         | 16 21.2 | -25 35  | 2.9    | 20"     | SCO | double star magnitude contrast |
| ST572 | Rho        | Rho OPH       | 16 25.6 | -23.5   | 5.3    | 3.1"    | Oph | double star                    |
| ST573 | V          | V OPH         | 16 26.7 | -12.4   | 7.3    | *       | Oph | variable star                  |
| ST574 | Epsilon    | Epsilon NOR   | 16 27.2 | -47.6   | 4.8    | 23"     | Nor | double star                    |
| ST575 | Iota       | Iota TRA      | 16 28.0 | -64.1   | 5.3    | 20"     | Tra | double star                    |
| ST576 | Σ2052      | Struve 2052   | 16 28.9 | +18.4   | 7.7    | 1.7"    | Her | double star                    |
| ST577 | Antares    | Alpha SCO     | 16 29.4 | -26.4   | 1      | 3"      | SCO | double star challenge          |
| ST578 | Lambda     | Lambda OPH    | 16 30.9 | +02.0   | 4.2    | 1.4"    | Oph | double star challenge          |
| ST579 | R          | R DRA         | 16 32.7 | +66.8   | 6.7    | *       | Dra | variable star                  |
| ST580 | 16         |               | 16 36.2 | +52 55  | 5.1    | 3"      | Dra | triple star                    |
| ST581 | H          | H SCO         | 16 36.4 | -35.3   | 4.2    | *       | SCO | star                           |
| ST582 | Zeta       | Zeta OPH      | 16 37.2 | -10.6   | 2.6    | *       | Oph | star                           |
| ST583 | SU         | SU SCO        | 16 40.6 | -32.4   | 8      | *       | SCO | variable star                  |
| ST584 | Zeta       | Zeta HER      | 16 41.3 | +31.6   | 3      | 1.4"    | Her | colored double star            |
| ST585 | Alpha      | Alpha TRA     | 16 48.7 | -69     | 1.9    | *       | Tra | star                           |
| ST586 | Eta        | Eta ARA       | 16 49.8 | -59     | 3.8    | *       | Ara | star                           |
| ST587 | Epsilon    | Epsilon SCO   | 16 50.2 | -34.3   | 2.3    | *       | SCO | star                           |
| ST588 | Mu         | Mu SCO        | 16 52.3 | -38     | 3      | *       | SCO | star                           |
| ST589 | 20         | 20 DRA        | 16 56.4 | +65.0   | 7.1    | 1.4"    | Dra | double star challenge          |
| ST590 | RR         | RR SCO        | 16 56.6 | -30.6   | 5.1    | *       | SCO | variable star                  |
| ST591 | Kappa      | Kappa OPH     | 16 57.7 | +09.4   | 3.2    | 75'     | Oph | star                           |
| ST592 | Zeta       | Zeta ARA      | 16 58.6 | -56     | 3.1    | *       | Ara | star                           |
| ST593 | Epsilon1   | Epsilon1 ARA  | 16 59.6 | -53.2   | 4.1    | 40'     | Ara | star                           |
| ST594 | Mu         |               | 17 05.3 | +54 28  | 4.9    | 2"      | Dra | double star equal magnitude    |
| ST595 | Eta        | Eta OPH       | 17 10.4 | -15.7   | 2.4    | 0.6"    | Oph | double star challenge          |
| ST596 | Rasalgethi | Alpha HER     | 17 14.6 | +14.4   | 3      | 4.6"    | Her | double star equal magnitude    |
| ST597 | Delta      |               | 17 15.0 | +24 50  | 3.2    | 10"     | Her | double star magnitude contrast |
| ST598 | Pi         | Pi HER        | 17 15.0 | +36.8   | 3.2    | 7°      | Her | star                           |
| ST599 | 36         |               | 17 15.3 | -26 36  | 4.3    | 5"      | Oph | double star equal magnitude    |
| ST600 | 39         |               | 17 18.0 | -24 17  | 5.2    | 10"     | Oph | colored double star            |
| ST601 | Theta      | Theta OPH     | 17 22.0 | -25     | 3.3    | *       | Oph | star                           |
| ST602 | Rho        | Σ2161, 75 Her | 17 23.7 | +37 09  | 4.2    | 4"      | Her | double star                    |
| ST603 | Beta       | Beta ARA      | 17 25.3 | -55.5   | 2.9    | *       | Ara | star                           |
| ST604 | Gamma      | Gamma ARA     | 17 25.4 | -56.4   | 3.3    | *       | Ara | star                           |
| ST605 | Sigma      | Sigma OPH     | 17 26.5 | +04.1   | 4.3    | 4°      | Oph | star                           |
| ST606 | h4949      | h4949         | 17 26.9 | -45.9   | 6      | 2.2"    | Ara | double star                    |
| ST607 | Σ2173      |               | 17 30.4 | -01 04  | 6      | 1.1"    | Oph | double star challenge          |
| ST608 | Lambda     | Lambda HER    | 17 30.7 | +26.1   | 4.4    | *       | Her | star                           |
| ST609 | Upsilon    | Upsilon SCO   | 17 30.8 | -37.3   | 2.7    | *       | SCO | star                           |
| ST610 | Alpha      | Alpha ARA     | 17 31.8 | -49.9   | 3      | *       | Ara | star                           |
| ST611 | Nu         |               | 17 32.2 | +55 11  | 4.9    | 62"     | Dra | double star equal magnitude    |
| ST612 | Shaula     | Lambda SCO    | 17 33.6 | -37.1   | 1.6    | 35'     | SCO | star                           |
| ST613 | Rasalhague | Alpha Oph     | 17 34.9 | +12 34  | 2.1    | *       | Oph | star                           |
| ST614 | Iota       | Iota HER      | 17 39.5 | +46.0   | 3.8    | *       | Her | star                           |

|       |           |               |         |         |        |         |     |                                    |
|-------|-----------|---------------|---------|---------|--------|---------|-----|------------------------------------|
| ST690 | RR        |               | 19 25.5 | +42 47  | 7.1    | Stellar | Lyr | variable star                      |
| ST691 | Σ2525     | Struve 2525   | 19 26.6 | +27.3   | 8.1    | 2"      | Vul | double star                        |
| ST692 | h5114     | h5114         | 19 27.8 | -54.3   | 5.7    | 70"     | Tel | double star                        |
| ST693 | Alpha     | Alpha VUL     | 19 28.7 | +24.7   | 4.4    | *       | Vul | star                               |
| ST694 | Albireo   | Beta CYG      | 19 30.7 | +28.0   | 3      | 35"     | Cyg | colored double star                |
| ST695 | Mu        | Mu AQL        | 19 34.1 | +07.4   | 4.5    | *       | Aql | star                               |
| ST696 | AQ        | AQ SGR        | 19 34.3 | -16.4   | 9.1    | *       | Sgr | variable star                      |
| ST697 | R         | R CYG         | 19 36.8 | +50.2   | 6.1    | *       | Cyg | variable star                      |
| ST698 | HN84      |               | 19 39.4 | +16 34  | 6.4    | 28"     | Sge | colored double star                |
| ST699 | 54        | 54 SGR        | 19 40.7 | -16.3   | 5.4    | 38"     | Sgr | double star                        |
| ST700 | TT        | TT CYG        | 19 40.9 | +32.6   | 7.8    | *       | Cyg | variable star                      |
| ST701 | 16        |               | 19 41.8 | +50 32  | 6      | 39"     | Cyg | double star equal magnitude        |
| ST702 | Delta     | Σ2579, 18 Cyg |         | 19 45.0 | +45 08 | 2.9     | 2"  | Cyg double star magnitude contrast |
| ST703 | OΣΣ191    | H V 137       | 19 45.9 | +35 01  | 6      | 39"     | Cyg | colored double star                |
| ST704 | Gamma     | Gamma AQL     | 19 46.3 | +10.6   | 2.7    | *       | Aql | star                               |
| ST705 | 17        | Σ2580         | 19 46.4 | +33 44  | 5      | 26"     | Cyg | double star magnitude contrast     |
| ST706 | Delta     | Delta SGE     | 19 47.4 | +18.5   | 3.8    | *       | Sge | star                               |
| ST707 | Epsilon   |               | 19 48.2 | +70 16  | 3.8    | 3"      | Dra | double star magnitude contrast     |
| ST708 | Pi        | Pi AQL        | 19 48.7 | +11.8   | 6.1    | 1.4"    | Aql | double star challenge              |
| ST709 | Zeta      |               | 19 49.0 | +19 09  | 5      | 9"      | Sge | double star                        |
| ST710 | Chi       |               | 19 50.6 | +32 55  | 3.3    | Stellar | Cyg | variable star                      |
| ST711 | Altair    | Alpha Aql     | 19 50.8 | +08 52  | 0.8    | *       | Aql | star                               |
| ST712 | Eta       | Eta AQL       | 19 52.5 | +01.0   | 3.4    | *       | Aql | variable star                      |
| ST713 | 57        |               | 19 54.6 | -08 14  | 5.7    | 36"     | Aql | double star                        |
| ST714 | Beta      | Beta AQL      | 19 55.3 | +06.4   | 3.7    | 13"     | Aql | double star                        |
| ST715 | Psi       |               | 19 55.6 | +52 26  | 4.9    | 3"      | Cyg | double star magnitude contrast     |
| ST716 | RR        | RR SGR        | 19 55.9 | -29.2   | 5.4    | *       | Sgr | variable star                      |
| ST717 | RU        | RU SGR        | 19 58.7 | -41.9   | 6      | *       | Sgr | variable star                      |
| ST718 | Gamma     | Gamma SGE     | 19 58.8 | +19.5   | 3.5    | *       | Sge | star                               |
| ST719 | BF        | BF SGE        | 20 02.4 | +21.1   | 8.5    | *       | Sge | variable star                      |
| ST720 | h1470     |               | 20 03.6 | +38 19  | 7.6    | 29"     | Cyg | colored double star                |
| ST721 | X         | X SGE         | 20 05.1 | +20.7   | 7      | *       | Sge | variable star                      |
| ST722 | WZ        | WZ SGE        | 20 07.6 | +17.7   | 7      | *       | Sge | variable star                      |
| ST723 | Kappa     | Σ2675         | 20 08.9 | +77 43  | 4.4    | 7"      | Cep | double star magnitude contrast     |
| ST724 | Theta     | Σ2637         | 20 09.9 | +20 55  | 6.4    | 12"     | Sge | triple star                        |
| ST725 | RY        | RY CYG        | 20 10.4 | +36.0   | 8.5    | *       | Cyg | variable star                      |
| ST726 | FG        | FG SGE        | 20 11.9 | +20.3   | 9.5    | *       | Sge | planetary nebula irregular         |
| ST727 | Σ2644     |               | 20 12.6 | +00 52  | 6.8    | 3"      | Aql | double star equal magnitude        |
| ST728 | RS        | RS CYG        | 20 13.4 | +38.7   | 6.5    | *       | Cyg | variable star                      |
| ST729 | Σ2658     |               | 20 13.6 | +53 07  | 7.1    | 5"      | Cyg | double star                        |
| ST730 | Omicron1  | Omicron1 CYG  |         | 20 13.6 | +46.7  | 3.8     | *   | Cyg star                           |
| ST731 | RT        | RT CAP        | 20 17.1 | -21.3   | 8.9    | *       | Cap | variable star                      |
| ST732 | Alpha     | Alpha CAP     | 20 17.6 | -12.5   | 4.2    | 44"     | Cap | star                               |
| ST733 | RT        | RT SGR        | 20 17.7 | -39.1   | 6      | *       | Sgr | variable star                      |
| ST734 | P         |               | 20 17.8 | +38 02  | 3      | Stellar | Cyg | variable star                      |
| ST735 | Alpha     |               | 20 18.0 | -12 32  | 3.8    | 7"      | Cap | quadruple star                     |
| ST736 | Σ2671     |               | 20 18.4 | +55 23  | 6      | 4"      | Cyg | double star                        |
| ST737 | U         | U CYG         | 20 19.6 | +47.9   | 5.9    | *       | Cyg | variable star                      |
| ST738 | Beta      | Beta CAP      | 20 21.0 | -14.8   | 3.4    | 3'      | Cap | double star                        |
| ST739 | 39        | 39 CYG        | 20 23.9 | +32.2   | 4.4    | *       | Cyg | star                               |
| ST740 | Peacock   | Alpha PAV     | 20 25.6 | -56.7   | 1.9    | *       | Pav | star                               |
| ST741 | pi        |               | 20 27.3 | -18 13  | 5.3    | 3"      | Cap | double star magnitude contrast     |
| ST742 | Omicron   | SHJ 324       | 20 29.9 | -18 35  | 6.1    | 19"     | Cap | double star                        |
| ST743 | 49        | Σ2716         | 20 41.0 | +32 18  | 5.5    | 3"      | Cyg | double star magnitude contrast     |
| ST744 | V         | V CYG         | 20 41.3 | +48.2   | 7.7    | *       | Cyg | variable star                      |
| ST745 | Deneb     | Alpha Cyg     | 20 41.4 | +45 17  | 1.3    | *       | Cyg | star                               |
| ST746 | 52        | 52 CYG        | 20 45.7 | +30.7   | 4.2    | 6"      | Cyg | double star                        |
| ST747 | Gamma     |               | 20 46.7 | +16 07  | 4.3    | 10"     | Del | double star                        |
| ST748 | Lambda    | Lambda CYG    | 20 47.4 | +36.5   | 4.9    | 0.9"    | Cyg | double star challenge              |
| ST749 | 3         | 3 AQR         | 20 47.7 | -5      | 4.4    | *       | Aqr | red variable star                  |
| ST750 | S763      |               | 20 48.4 | -18 11  | 6.7    | 16"     | Cap | double star                        |
| ST751 | 4         | 4 AQR         | 20 51.4 | -5.6    | 6.4    | 0.8"    | Aqr | double star challenge              |
| ST752 | Omega     | Omega CAP     | 20 51.8 | -26.9   | 4.1    | *       | Cap | star                               |
| ST753 | Epsilon   | 1 Equ         | 20 59.1 | +04 18  | 5.2    | 1"      | Equ | triple star challenge              |
| ST754 | Σ2751     | Struve 2751   | 21 02.1 | +56.7   | 6.1    | 1.5"    | Cep | double star challenge              |
| ST755 | 2         | Σ2742         | 21 02.2 | +07 11  | 7.4    | 3"      | Equ | double star equal magnitude        |
| ST756 | Dunlop236 | Dunlop 236    | 21 02.2 | -43     | 6      | 57"     | Mic | double star                        |
| ST757 | Lambda    | Lambda EQU    | 21 02.2 | +07.2   | 7.4    | 3"      | Equ | double star                        |
| ST758 | 12        |               | 21 04.1 | -05 49  | 5.9    | 3"      | Aqr | double star challenge              |
| ST759 | Xi        | Xi CYG        | 21 04.9 | +43.9   | 3.7    | *       | Cyg | star                               |
| ST760 | 61        | Σ2758         | 21 06.9 | +38 39  | 5.2    | 29"     | Cyg | double star                        |
| ST761 | 24        | 24 CAP        | 21 07.1 | -25     | 4.5    | *       | Cap | stellar planetary nebula           |
| ST762 | T         | T CEP         | 21 09.5 | +68.5   | 5.2    | *       | Cep | variable star                      |
| ST763 | Gamma     | Gamma EQU     | 21 10.3 | +10.1   | 4.7    | 6'      | Equ | double star                        |



# WARRANTY / REPAIR

## TELESCOPE LIFETIME LIMITED WARRANTY

Your Bushnell® telescope is warranted to be free of defects in materials and workmanship for the lifetime of the original owner. The Lifetime Limited Warranty is an expression of our confidence in the materials and mechanical workmanship of our products and is your assurance of a lifetime of dependable service.

If your telescope contains electrical components, these components are warranted to be free of defects in materials and workmanship for two years after the date of purchase.

In the event of a defect under this warranty, we will, at our option, repair or replace the product, provided that you return the product postage prepaid. This warranty does not cover damages caused by misuse, improper handling, installation, or maintenance provided by someone other than a Bushnell Authorized Service Department.

Any return made under this warranty must be accompanied by the items listed below:

- 1) A check/money order in the amount of \$15.00 to cover the cost of postage and handling
- 2) Name and address for product return
- 3) An explanation of the defect
- 4) Proof of Date Purchased
- 5) Product should be well packed in a sturdy outside shipping carton, to prevent damage in transit, with return postage prepaid to the address listed below:

**IN U.S.A. Send To:**

Bushnell Performance Optics  
Attn.: Repairs  
8500 Marshall Drive  
Lenexa, Kansas 66214

**IN CANADA Send To:**

Bushnell Performance Optics  
Attn.: Repairs  
25A East Pearce Street, Unit 1  
Richmond Hill, Ontario L4B 2M9

For products purchased outside the United States or Canada please contact your local dealer for applicable warranty information. In Europe you may also contact Bushnell at:

BUSHNELL Performance Optics GmbH  
European Service Centre  
MORSESTRASSE 4  
D- 50769 KÖLN  
GERMANY  
Tél: +49 (0) 221 709 939 3  
Fax: +49 (0) 221 709 939 8

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You may have other rights which vary from country to country.  
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**For further questions or additional information please contact:**

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