

GM-1

Galileo®



1564 - 1642

Instructions

GALILEO GM1 OPERATING INSTRUCTIONS

INTRODUCTION

THIS TELESCOPE HAS BEEN CORRECTED AGAINST CHROMATIC ABERRATION AND PRODUCED TO PRECISE SPECIFICATIONS.

PRIOR TO USING YOUR NEW GALILEO TELESCOPE, PLEASE READ THE FOLLOWING SETUP AND USAGE INSTRUCTIONS. IT IS IMPORTANT TO PROPERLY ASSEMBLE YOUR TELESCOPE IN ORDER ALLOW THE TELESCOPE TO FUNCTION PROPERLY.

CONSIDER USING THE TELESCOPE FOR EARTH, TERRESTRIAL, VIEWING BEFORE ATTEMPTING TO VIEW ASTRONOMICAL OBJECTS. THIS WILL FAMILIARIZE YOU WITH HOW POWERFUL EACH EYEPIECE WILL BE, AS WELL AS INTRODUCING YOU TO THE FUNCTIONS OF YOUR ACCESSORY LENS.

THE IMAGE YOU WILL SEE IS EITHER UPSIDE DOWN OR BACKWARD. THIS IS DUE TO THE FACT THAT YOUR TELESCOPE IS AN ASTRONOMICAL TELESCOPE AND HAS BEEN MANUFACTURED FOR STAR AND PLANETARY OBSERVATIONS. IN ASTRONOMICAL VIEWING, THERE IS NO UP OR DOWN, NO RIGHT OR LEFT.

YOUR GALILEO TELESCOPE IS COMPLETE WITH A 1.5 POWER ERECTING EYEPIECE FOR USE ON LAND. BY PLACING THIS ACCESSORY INTO THE FOCUSING TUBE AND THEN PUTTING THE INTENDED EYEPIECE INTO THE ERECTING EYEPIECE, YOU WILL SEE THE OBJECT NORMALLY.

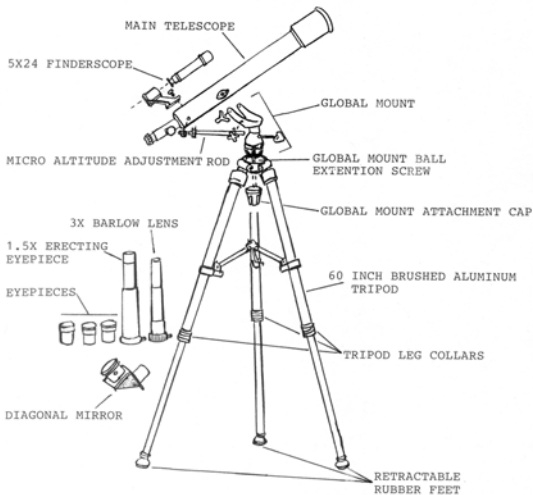
WE RECOMMEND YOU BEGIN WITH THE LOWEST POWER EYEPIECE, 20MM, WHEN FIRST USING YOUR TELESCOPE. AS YOU INCREASE THE POWER, 12.5MM & 4MM, YOUR POWER WILL BE HIGHER, BUT THE IMAGE WILL APPEAR DARKER. THIS IS DUE TO THE BASIC PHYSICAL PROPERTIES OF THE TELESCOPE. THE HIGHER POWER YOU USE, THE DARKER THE IMAGE WILL APPEAR AND YOUR VIEWING FIELD WILL BE MORE NARROW.

PLEASE BE PATIENT WHEN FIRST USING YOUR TELESCOPE. IT IS A VERY SENSITIVE INSTRUMENT THAT IS CAPABLE OF USING HIGH POWERS. HOWEVER, THE MORE POWER YOU USE, THE MORE SENSITIVE THE TELESCOPE BECOMES. AS A RESULT, THE SLIGHTEST MOVEMENT OF THE TELESCOPE COULD CAUSE YOU TO LOSE THE IMAGE YOU HAVE IN YOUR EYEPIECE. PRACTICE, WILL ENABLE YOU TO KNOW HOW MUCH MOVEMENT TO EXPECT WITH EACH EYEPIECE AND IT'S CORRESPONDING POWER.

GALILEO GLOBAL SCOPE ASSEMBLY INSTRUCTIONS

1. REMOVE TRIPOD FROM BOX
2. EXTEND TRIPOD LEGS - LOOSEN COLLARS BY TURNING IN A COUNTER CLOCKWISE DIRECTION. ADJUST TRIPOD TO DESIRED HEIGHT AND TIGHTEN COLLARS.
3. FOR USE ON A HARD SURFACE, INSURE RUBBER TRIPOD ENDS ARE EXTENDED FULLY. FOR USE ON SOFT SURFACES, RETRACT TRIPOD ENDS TO EXPOSE POINTED CLEATS FOR STABLE POSITIONING.
4. REMOVE GM1 TELESCOPE FROM BOX. REMOVE GLOBAL MOUNT ATTACHMENT CAP BY UNSCREWING COMPLETELY FROM MOUNT.
5. PLACE TELESCOPE GLOBAL MOUNT BALL EXTENSION SCREW INTO THE TOP ATTACHMENT HOLE IN THE GLOBAL MOUNT SOCKET AND RE-ATTACH CAP.
6. TIGHTEN FULLY FOR INITIAL SET UP.
7. REMOVE 5 X 24 FINDERSCOPE FROM BOX AND ATTACH TO THE SCREWS LOCATED ON TOP OF THE MAIN TELESCOPE .

GALILEO GLOBAL TELESCOPE
ASSEMBLY INSTRUCTIONS



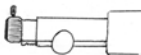
ACCESSORIES

- A. MICRO ALTITUDE ADJUSTMENT ROD -
ALLOWS FINITE VERTICAL MOVEMENT.
- B. 5 X 24 FINDER SCOPE -
USED TO LOCATE OBJECTS PRIOR TO USING
MAIN TELESCOPE. PLEASE NOTE YOU MUST ALIGN THE
FINDERSCOPE WITH THE MAIN TUBE PRIOR TO INITIAL
ASTRONOMICAL OR TERRESTRIAL USE.
- C. 3X BARLOW LENS -
USED TO INCREASE THE POWER OF ANY GIVEN EYEPIECE
BY 300%. EXAMPLE - 20MM EYEPIECE SEPARATELY
PROVIDES 45 POWER. WHEN USED WITH THE 3X
BARLOW, YOU NOW HAVE 135 POWER.
- D. 1.5X ERECTING EYEPIECE -
USED TO CONVERT THE UPSIDE DOWN, ASTRONOMICAL
IMAGE, TO A RIGHTSIDE UP, TERRESTRIAL IMAGE.
- E. EYE PIECES:
4MM = 225X (675X WITH 3X BARLOW LENS) MOST
POWERFUL LEAST LIGHT
12.5MM = 72X (216X WITH 3X BARLOW LENS) MIDDLE
POWER / AVERAGE LIGHT
20MM = 45X (135X WITH BARLOW LENS) LEAST POWER /
MOST LIGHT
- F. DIAGONAL MIRROR -
USED TO MAKE VIEWING EASIER FROM EITHER SIDE OF
THE TELESCOPE. THE DIAGONAL MIRROR WILL ALSO
MAKE THE UPSIDE IMAGE APPEAR RIGHT SIDE UP. THE
IMAGE, HOWEVER, WILL BE BACKWARD AS IT WOULD
APPEAR IN A MIRROR.
- G. 60 INCH BRUSHED ALUMINUM TRIPOD
TWO PIECE ALUMINUM TRIPOD IS AT EIGHT INCHES
TALLER THAN NORMAL WOODEN TRIPODS. THERE IS NO
ASSEMBLY REQUIRED. IT ALSO HAS RETRACTABLE
RUBBER FEET THAT ALLOW USE ON SURFACES OTHER
THAT HARD SURFACES.
- H. GLOBAL MOUNT -
THE NEW GLOBAL MOUNT ALLOWS 360 DEGREE
TRACKING. PROVIDES TOTAL FREEDOM OF MOVEMENT.
SINGLE CAP ATTACHMENT ALLOWS SETTING THE
TELESCOPE UP IN LESS THAN THREE MINUTES.

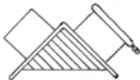
HOW TO USE EYEPIECES & ACCESSORIES

PROPER PLACEMENT OF THE EYEPIECES AND ACCESSORIES IS IMPORTANT IN ORDER TO ASSURE EASY OPERATION AND CLEAR VIEWING.

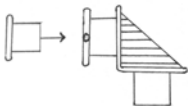
PLEASE CONSIDER USING YOUR ACCESSORIES IN THE FOLLOWING ORDER. BY DOING THIS, YOU WILL BETTER UNDERSTAND THE IMPACT EACH INDIVIDUAL ACCESSORY HAS ON THE FUNCTION OF YOUR TELESCOPE.



- 1. FOCUSING TUBE -** TURN FOCUSING WHEELS TOWARD THE TELESCOPE UNTIL IT WILL NOT GO FURTHER. TO FOCUS, BEGIN TO TURN THE FOCUSING KNOBS TOWARD YOUR BODY, SLOWLY, UNTIL THE IMAGE IS CLEAR. NOTE: YOU MUST HAVE AN EYEPIECE INSERTED IN ORDER TO VIEW IMAGE. PLEASE READ FURTHER.



- 2. DIAGONAL MIRROR**
INSERT THE DIAGONAL MIRROR INTO THE FOCUSING TUBE. THE DIAGONAL WILL MAKE THE IMAGE APPEAR RIGHT SIDE UP, BUT BACKWARD.



- 3. EYEPIECE INSERTION**
ONCE THE DIAGONAL IS INSERTED, INSERT AN EYEPIECE INTO THE RECEIVING END OF THE DIAGONAL MIRROR. WE SUGGEST YOU ALWAYS BEGIN WITH THE LOWEST POWER EYEPIECE, (20MM). REMEMBER, THE LOWER THE NUMBER ON THE EYEPIECE, THE HIGHER THE POWER YOUR TELESCOPE WILL BE USING.

ALSO, AS YOU INCREASE YOUR POWER, YOU DECREASE THE FIELD OF VIEW AND THE BRIGHTNESS OF YOUR TELESCOPE. WE SUGGEST YOU ALWAYS USE THE LOWEST POWER REQUIRED TO CLEARLY VIEW YOUR SUBJECT.



- 4. BARLOW LENS**
BARLOW LENS ARE REQUIRED TO ACHIEVE THE MAXIMUM POWERS FROM YOUR TELESCOPE. WE SUGGEST YOU FIRST REMOVE THE DIAGONAL MIRROR AND INSERT THE BARLOW LENS DIRECTLY INTO THE FOCUSING TUBE.

REMEMBER, YOU WILL HAVE TO READJUST YOUR FOCUSING DUE TO THE FACT THAT YOU HAVE INCREASED / DECREASED THE POWER OF YOUR TELESCOPE DRAMATICALLY.



- 5. 1.5X ERECTING EYEPIECE**
IF YOU ARE CURRENTLY USING A DIAGONAL MIRROR OR BARLOW LENS, REMOVE IT BEFORE INSERTING THE ERECTING EYEPIECE.

INSERT THE ERECTING EYEPIECE DIRECTLY INTO THE FOCUSING TUBE. THEN, PLACE THE REGULAR EYEPIECE INTO THE RECEIVING END OF THE ERECTING EYEPIECE.

FINDER SCOPE ALIGNMENT

ONCE ASSEMBLY OF THE TELESCOPE IS COMPLETE, YOU MUST ALIGN THE FINDERSCOPE WITH THE MAIN TELESCOPE

1. DURING THE DAY LIGHT HOURS, AIM THE MAIN TELESCOPE AT AN OBJECT AT LEAST 1/4 MILE OR MORE, IN THE DISTANCE. WE SUGGEST YOU FIND SOMETHING WITH AN APEX, CROSS HAIR, SUCH AS A TELEPHONE OR UTILITY POLE. THESE OBJECTS USUALLY HAVE HORIZONTAL AND VERTICAL REFERENCES. POSITION THE INTERSECTION OF THE HORIZONTAL AND VERTICAL REFERENCES IN THE MIDDLE OF THE VIEWING FIELD OF THE MAIN TELESCOPE AND BRING IT INTO FOCUS.

HOPEFULLY, YOUR POINT OF REFERENCE WILL SIMULATE THE CROSS HAIRS OF THE FINDERSCOPE.

NOTE: THE IMAGE WILL APPEAR REVERSED

2. ONCE YOU HAVE CENTERED THE REFERENCE ITEM IN THE MAIN TUBE, TIGHTEN ALL KNOBS AND ADJUSTMENTS TO PREVENT ANY MOVEMENT.

3. NOW LOOK INTO THE FINDERSCOPE AND LOCATE THE SAME OBJECT YOU HAVE SELECTED WITH THE MAIN TELESCOPE. AGAIN, THE OBJECT WILL APPEAR UPSIDE DOWN. FOCUS THE FINDERSCOPE BY TURNING THE EYEPIECE UNTIL THE IMAGE IS CLEAR.

4. CENTER THE OBJECT ON THE CROSSHAIR INTERSECTION BY TURNING THE ALIGNMENT SCREWS IN THE FINDERSCOPE BRACKET.

5. THE OBJECT IN THE FINDERSCOPE WILL ALSO BE VISIBLE THROUGH THE MAIN TELESCOPE. IF THIS IS NOT THE CASE, REPEAT STEPS ONE THROUGH FOUR.

PATIENCE IS A VIRTUE IN THE INITIAL ATTEMPTS TO ALIGN THE FINDERSCOPE. STICK WITH IT. ONCE YOU GET AN IDEA HOW THE ALIGNMENT SCREWS MOVE THE FINDERSCOPE, IT WILL BE MUCH EASIER.

USING THE BARLOW LENS

AS STATED EARLIER IN THE INSTRUCTIONS, THE BARLOW LENS INCREASES THE POWER OF THE EYE PIECE BY THE MULTIPLES LISTED ON THE LENS ITSELF.

TO USE SIMPLY INSERT THE BARLOW LENS INTO THE MAIN FOCUSING TUBE AND THEN PUT THE DESIRED EYEPIECE INTO THE RECEIVING END OF THE BARLOW LENS.

PLEASE REMEMBER, THE HIGHER POWER YOU USE, THE DARKER THE IMAGE WILL APPEAR.

GETTING THE MOST FROM YOUR TELESCOPE

TAKE THE TIME TO BECOME FAMILIAR WITH YOUR NEW TELESCOPE. LEARN THE NAMES OF THE VARIOUS PARTS, WHERE THEY ARE LOCATED AND THEIR FUNCTION. IT IS BEST TO PERFORM THESE FUNCTIONS DURING THE DAY TIME.

WHEN SETTING UP FOR A VIEWING SESSION, PLACE THE TELESCOPE IN A AREA SHELTERED FORM THE WIND IF POSSIBLE. THE BEST NIGHT TIME VIEWING WILL BE AWAY FROM CITY LIGHTS AND WHEN THE ATMOSPHERE IS "STEADY".

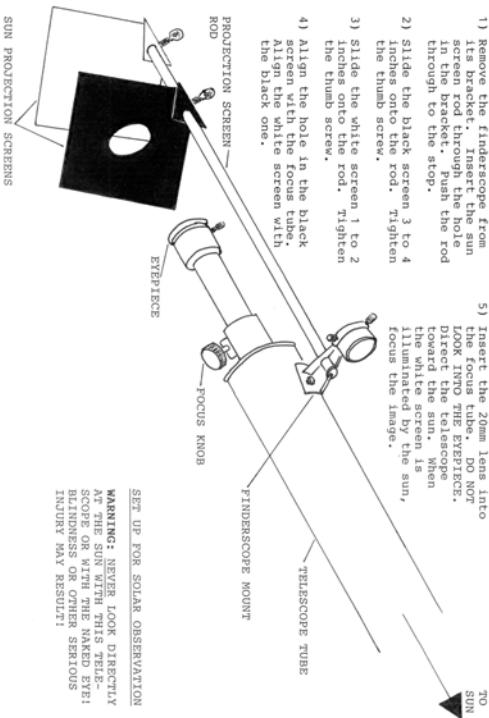
WITH A LITTLE PRACTICE YOU WILL LEARN TO JUDGE WHEN VIEWING CONDITIONS ARE GOOD. LOOK FOR THE NIGHTS WHEN THE STARS SHINE BRIGHTLY WITH LITTLE OR NO TWINKLING.

USE LOW POWER TO TAKE ADVANTAGE OF THE WIDER FIELD OF VIEW AND BRIGHTER IMAGES. RESERVE YOUR HIGH POWERS FOR THOSE NIGHTS WHEN THE VIEWING CONDITIONS ALLOW DETAILED OBSERVATIONS.

LASTLY, SPEND SOME TIME WITH YOUR LOCAL ASTRONOMY CLUB. YOU CAN LEARN MORE IN ONE HOUR WITH AN EXPERIENCED ASTRONOMER THAN YOU WILL IN A MONTH OF CASUAL VIEWING.

OBSERVING THE SUN

- 1) Remove the finderscope from its bracket. Insert the sun screen rod through the hole in the bracket. Push the rod through to the stop.
- 2) Slide the black screen 3 to 4 inches onto the rod. Tighten the thumb screw.
- 3) Slide the white screen 1 to 2 inches onto the rod. Tighten the thumb screw.
- 4) Align the hole in the black screen with the focus tube. Align the white screen with the black one.
- 5) Insert the 20mm lens into the focus tube. **DO NOT LOOK INTO THE EYEPIECE.** Direct the telescope toward the sun. When the white screen is illuminated by the sun, focus the image.



SET UP FOR SOLAR OBSERVATION

WARNING: NEVER LOOK DIRECTLY AT THE SUN WITH THIS TELESCOPE OR WITH THE NAKED EYE! BLINDNESS OR OTHER SERIOUS INJURY MAY RESULT!

ABOUT MAGNIFICATION

YOUR NEW GALILEO TELESCOPE IS CAPABLE OF MAGNIFYING IMAGES OF OBJECTS VERY FAR AWAY AND MAKE THEM LARGE ENOUGH TO SEE MORE CLEARLY AND CLOSELY. IF THE POWER IS EXPRESSED AS 225X. THIS MEANS YOUR IMAGE WILL APPEAR 225 TIMES CLOSER.

YOUR TELESCOPE TUBE IS NOT MAGNIFYING IMAGES, IT IS GATHERING LIGHT. YOUR EYEPIECE THEN ALLOWS YOU TO VIEW THE GATHERED LIGHT AT DIFFERENT POWERS.

THE LARGE LENS AT THE END OF YOUR TELESCOPE IS CALLED THE "OBJECTIVE LENS". THIS LENS FOCUSES THE AVAILABLE LIGHT INTO ONE SPECIFIC LOCATION CALLED THE "FOCAL POINT". AT THIS POINT, THE EYEPIECE, WHICH IS REALLY A SMALL MAGNIFYING GLASS EXAMINES THE GATHERED LIGHT.

EACH EYEPIECE IS AVAILABLE IN DIFFERENT FOCAL LENGTHS. THE FOCAL LENGTH OF THE EYEPIECE IS MARKED ON THE TOP OF THE EYEPIECE AND APPEARS AS 4MM, 12.5MM OR 20MM. THE NUMBER IS THE FOCAL LENGTH IN MILLIMETERS.

LIKewise YOU CAN CHECK THE FOCAL LENGTH OF YOUR TELESCOPE BY REFERRING TO THE SIDE OF THE TELESCOPE. IT WILL APPEAR AS, FOCAL LENGTH 900MM. AGAIN, YOUR TELESCOPE FOCAL LENGTH IS CONFIGURED IN MILLIMETERS

NOW THAT YOU KNOW WHERE TO FIND THE FOCAL LENGTH OF YOUR EYEPIECES AND TELESCOPE, YOU CAN NOW WORK OUT THE POWERS OF EACH EYEPIECE BY USING THE FOLLOWING SIMPLE FORMULA.

POWER = FOCAL LENGTH OF THE TELESCOPE DIVIDED BY THE FOCAL LENGTH OF THE EYEPIECE.

EXAMPLE: IF YOUR TELESCOPE HAS A FOCAL LENGTH OF 900MM AND YOU ARE USING THE 20MM EYEPIECE, YOU WOULD DIVIDE 900 BY 20. THIS WILL TELL THE POWER OF THE 20MM EYEPIECE WHEN USED IN A TELESCOPE WITH A 900MM FOCAL LENGTH IS 45X. THIS MEANS THAT THE 20MM EYEPIECE WILL BRING OBJECTS 45 TIMES CLOSER. WHEN YOU USE YOUR 3X BARLOW LENS, YOU SEE THE OBJECT 135 TIMES CLOSER.

YOUR TELESCOPE HAS BEEN DESIGNED TO GIVE YOU BOTH LAND AND SKY VIEWING. THESE TWO USES ARE CALLED ASTRONOMICAL, SKY VIEWING, AND TERRESTRIAL, LAND VIEWING.

WHEN USING YOUR TELESCOPE FOR TERRESTRIAL VIEWING, UNDERSTAND THAT EVEN ON A BRIGHT SUNNY DAY, THE IMAGE WILL APPEAR DARKER AS YOU INCREASE THE POWER. THESE ARE SIMPLY PHYSICAL LAWS OF SCIENCE CAUSING THIS AND THE ONLY THING TO DO IN ORDER TO GET A BRIGHTER IMAGE IS TO LOWER THE POWER. REMEMBER "MORE POWER EQUALS LESS BRIGHTNESS. MORE BRIGHTNESS EQUALS LESS POWER".

THE SAME HOLDS TRUE FOR NIGHT TIME, ASTRONOMICAL VIEWING. ALSO, AS THE AMOUNT OF EXISTING LIGHT IS MUCH LESS AT NIGHT THAN DURING THE DAY, THE DARKENING EFFECT IS NOTICED AT LOWER POWERS. WE REFER TO POWERS OF UNDER 100X AS "LOW POWER", 100X TO 200X "MEDIUM POWER" AND OVER 200X IS CONSIDERED "HIGH POWER".

WE RECOMMEND THE FOLLOWING GUIDELINES

LOW POWER - LAND VIEWING ANYTIME OF DAY. ASTRONOMICAL VIEWING ANYTIME DURING THE EVENING.

MEDIUM POWER - LAND VIEWING ANYTIME OF DAY. ASTRONOMICAL VIEWING ON A CLEAR NIGHT.

HIGH POWER - LAND VIEWING ON A BRIGHT DAY. MOON VIEWING ON A CLEAR NIGHT. HIGH POWER IS NOT RECOMMENDED FOR NORMAL ASTRONOMICAL VIEWING.

Galileo Limited One Year Warranty

We guarantee to replace or, at our option, repair any products or parts thereof which are found defective in material or workmanship during the first year from date of purchase. Our obligation with respect to such products or parts shall be limited to replacement or repair, F.O.B. Miami, and in no event shall we be liable for consequential or special damages or for transportation, installation, adjustment, or other expenses which may arise in connection with such product or parts. A \$20.00 fee to cover postage and handling is required with the return of the product. No expenses, warranties and implied warranties, whether or not merchantability of fitness for any particular use or otherwise (except as to title) other than these expressly set forth above which are made in writing and signed by executive officer of our corporation.

NO LIABILITY FOR CONSEQUENTIAL DAMAGES, IN NO EVENT SHALL THE MANUFACTURER OR ITS SUPPLIERS BE LIABLE FOR ANY DAMAGES WHATSOEVER. BECAUSE SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF THE POSSIBILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

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