100 mm NEWTONIAN TELESCOPE
(The Galileoscope)

INSTRUCTION MANUAL

IIA – BANGALORE-560034

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1. Introduction

Galileo scope

The year 2009 marks the four hundredth anniversary of the first astronomical Observation through a telescope by the great Italian scientist Galileo Galilei. The United Nations General Assembly have voted to adopt the year as the International Year of Astronomy (IYA2009) at the instance of the International Astronomical Union (IAU).The theme of IYA2009 is `The Universe, You to Discover'. IAU has proposed several IYA2009 global cornerstone projects to promote widespread access to the universal knowledge of fundamental science through the excitement of astronomy and sky observing experiences. Developing a simple and low cost optical telescope, `The Galileoscope', for wide distribution to the people is one, if not the most important, of the projects envisaged under this scheme.

In the context of IYA2009, IIA has adopted the motto `Astronomy for all'. Keeping in mind our expertise in optical astronomy and our mandate of disseminating the knowledge and practice of astrophysics as widely as possible, we have concentrated our efforts in designing `The Galileoscope'. The aim is to make a sturdy, affordable and easyto-handle Newtonian telescope of about 100mm aperture. Our efforts have led to the production of a large number of Newtonian telescopes for the use of this telescope by enthusiastic individuals and institutions particularly for school and colleges for the purpose of familiarization and inculcating interest in the young ones.

2. Technical Specification

100mm Newtonian telescope on a simple Alt-Azimuth mount with dual axis movement.convertable to polar mount with a certain modifications to suit the local latitude.

Optical Specifications:

Primary Mirror
Diameter -100mm
Edge Thickness -12mm
Focal length -600mm
F ratio – F/6
Surface – Parabolic
Surface Accuracy – λ/4
Coating –Aluminium

Diagonal Flat Mirror
Size: 25mmx35mmx2mm
Surface: flat
Surface Accuracy - λ/4
Coating Aluminium

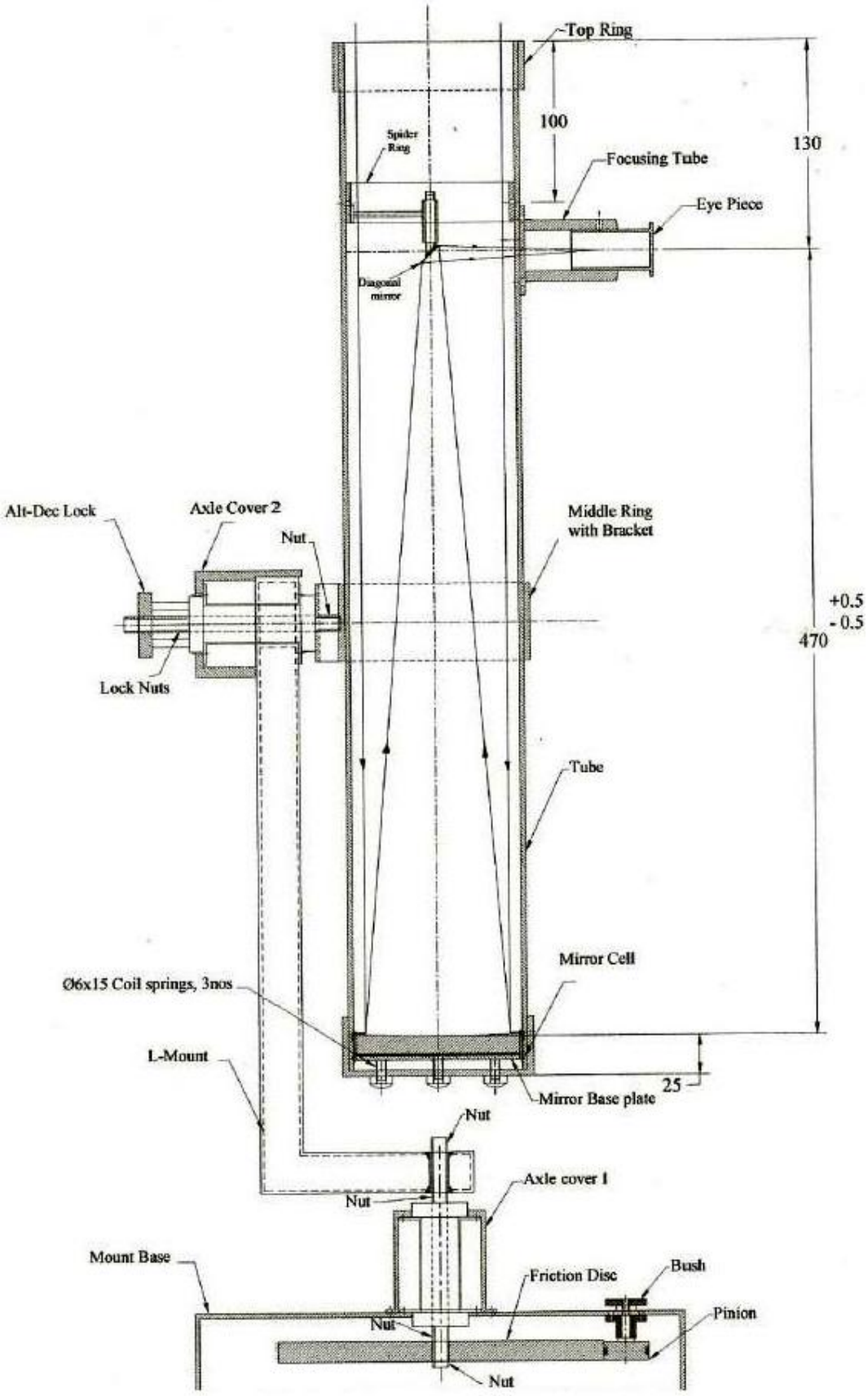
Eye Piece
10X (Standard eye piece)

3. System and components description

The components are made out of PVC, STEEL, aluminum and glass to bring down the manufacturing cost to low.

The following are the components of the Newtonian telescope:

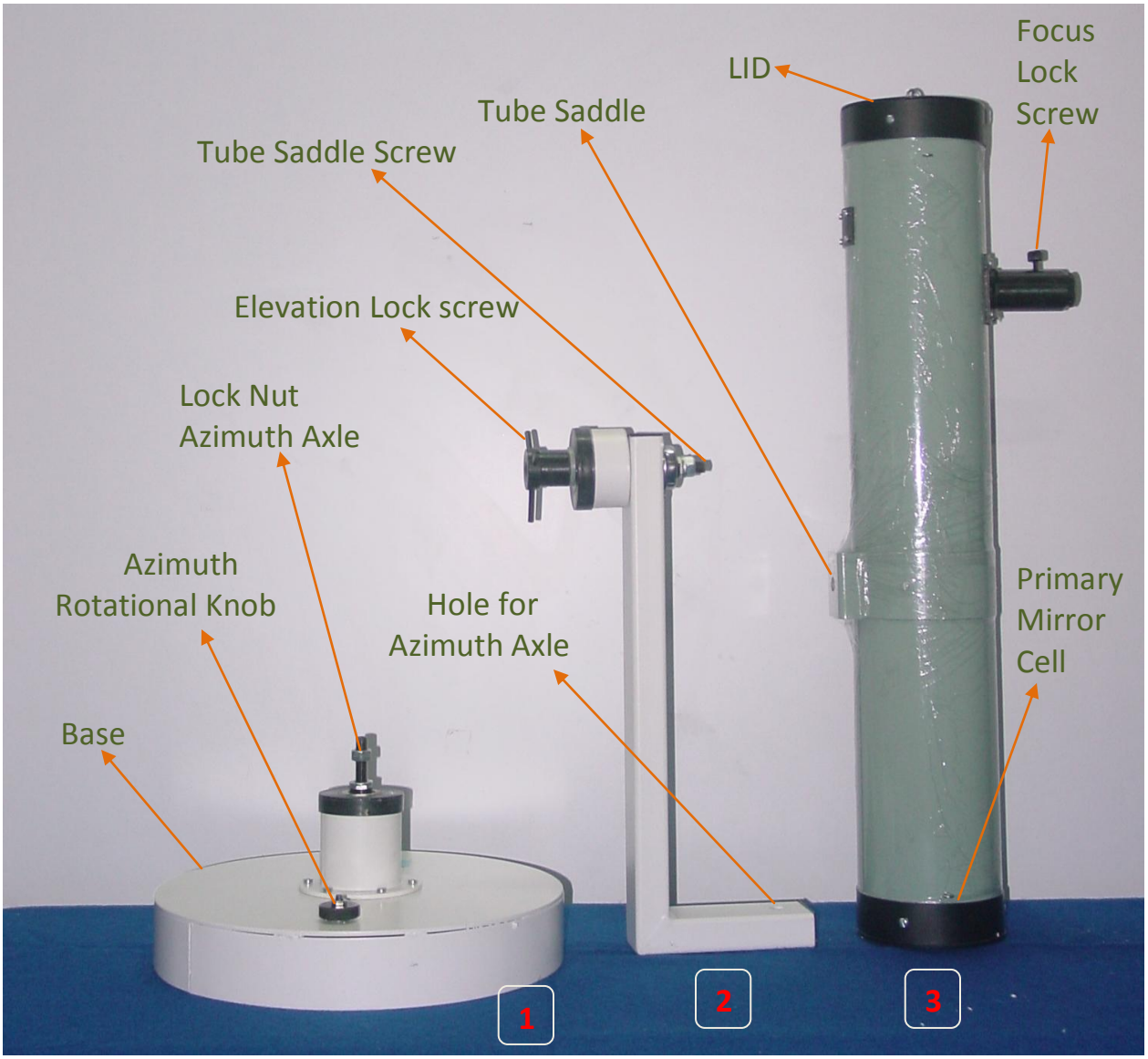
1. Telescope Tube
2. Focusing Mount
3. Eye piece sleeve
4. Top Ring
5. Middle Ring with bracket for DEC axis.
6. Mirror Cell
7. Spider ring with Arm
8. Mirror base plate
9. L-Mount
10. Friction disc, Pinion, Bush and Knob
11. Axle & Bearing Assembly
12. Axle cover -1
13. Telescope base
14. ALT/DEC lock cup
15. Axle cover -2
16. Teflon washer
17. Spider Arm
18. Mirrors
    a) Dia 100mmx12mmthick primary mirror made of Material BSC (commercial)
    b) 25mmx35mmx2mm diagonal flat made of Material BSC (commercial).
19. Simple Gun Sight arrangement on Telescope Tube.


Top Ring
100
130
Spider Ring
Focusing Tube
Eye Piece
Diagonal mirror
Alt-Dec Lock
Axle Cover 2
Nut
Middle Ring with Bracket
+0.5
- 0.5
470
Lock Nuts
Tube
Mirror Cell
Ø6x15 Coil springs, 3nos
L-Mount
25
Mirror Base plate
Nut
Axle cover 1
Nut
Mount Base
Friction Disc
Bush
Pinion
Nut
Nut

4. Telescope Packaging

Telescope packed in two boxes; the long one contains the tube assembly with optics in place, the smaller rectangular box contains the base and the mount.

5. Instructions for assembling the Telescope



Sub-Assemblies of the Telescope

1. Base of the Telescope with Azimuth Axis
2. Arm of the Telescope with the Elevation Axis
3. The Telescope tube with the eyepiece at the Newtonian focus

Follow the following Steps for Assembling the Telescope:

Step I: Remove the Azimuth lock nut from base unit.

Step II: Insert the Elevation Arm and lock with the nut using a spanner.

Step III: Fix the saddle screw of the elevation axle by screwing into the tube saddle tightly.

Fully Assembled Telescope

6. Do's & Don'ts

- Store the Packings in safe, dry and cool place while not in use.
- Preserve the carry bags & Packing
- Do not point the telescope to SUN <**DANGER**>
- Do not wipe optics with cloth, hand or tissue paper
- Secure the eye piece with focus lock screw after focusing
- Keep the elevation lock screw partially lock while manually following the objects.

7. For further information/Clarifications

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