

## INSTALLATION OF 2023-610/2024-1216/2029-RR “Rope Heaters for Newtonian Telescopes

**Electrical specification:**

**12 VDC, 8 watts/0.7A (per individual “rope” heater).** This product requires the use of a proper Dew Controller and 12V power source capable of 12.9V-13.8V and sufficient current (amps) to support a 0.7A (8 Watt) load (per heater).

INCLUDED with #2023-610:	INCLUDED with 2024-1216	INCLUDED with 2029-RR
1 x Red cord heater with F to M spade connectors	2 x Red cord heater with F to M spade connectors	2 x Red cord heater with F to M spade connectors
1 x RCA F to F adapter	1 x RCA Y adapter	1 x RCA Y adapter
1 x RCA male to male cable extension	1 x RCA male to male cable extension	1 x RCA male to male cable extension
		Copper Foil Conductor



With so many types of Newtonian mirror holders on the market today, we have redesigned our primary Newtonian mirror heaters to accommodate a larger variety of telescope models.

The **2023-610** heater is designed to be used with and placed onto the back side of 6” to 10” primary mirrors. The **2024-1216** heater is designed to be used with and placed onto the back side of 12” to 16” primary mirrors. The **2029-RR** "Red Rope Heater" is for more generic applications and offers several ways to connect to your Dew Controller. You can use either the standard wire or the copper foil tape which reduces obstructions in the light path.

The heater element (the red section) is quite flexible and can be worked around and through many obstacles which can make the installation of a typical flex heater awkward to impossible. The heater(s) will affix to the backside of the mirror and make direct contact with the glass. There is no right or wrong way to install this heater(s). The design gives you the flexibility to determine what installation method will work best with your telescope hardware.

How you secure the heater to the mirror is also left up to you. It can be taped or glued, but we believe that silicone caulking offers option because of its adhesive properties and the added advantage of being removable (can be peeled). For best performance, the heater should be in direct contact with the glass.

Before affixing the heater to the back of your mirror, it is highly recommended that this be done before making any of the cable connections to it. This will make it much easier to install the heater. If gluing or using silicone caulk to affix the heater, wait until the glue has fully set before making any cable connections.

**IMPORTANT:** The heating element (the red portion) cannot be cut or bent at acute angles. It will ruin the heater and void your warranty.

**Copper Foil Option:**

Model **2029-RR** includes a length of copper foil tape that can be used as an alternative to the insulated wire. This will be useful if you need wires to cross spider vanes that will obstruct the light-path. For instructions on how to use the foil tape, follow the instructions found in this installation guide:

<https://www.kendrickastro.com/pdf/2029-M.pdf>

When operating, we recommend the lowest dew control setting possible when using this heater as optical distortion may occur. Typically, this will be a 10% to 20% setting. You will need to decide what works best for you.