Disassembly of EVO Mount - *Azimuth base*

- This presentation serves only as a guide. The author of this presentation assumes no responsibility or liability for damages that may incur to anyone else's mount. It is up to the owner of the mount, to thoroughly review the instructions, thoroughly understand the instructions and ask questions about any areas that might need clarity or point out any steps contained in this presentation that may not be totally accurate or specific. The author is not responsible for the experience level of any other user when attempting disassembly or assembly. Failure to heed this warning is on you, and not the author or Celestron. It is also the author's wish that through practical criticism and suggestions, that this product also gets improved through time. This guide covers only general disassembly and reassembly. It does not cover any additional maintenance that the mount may require.

Disassembly of EVO Mount - *Azimuth base*

- If your mount needs attention or repairs and it is within it 2-year warranty period, it might be best to contact Celestron and get an RMA. Following the procedures outlined below would result in a void in your warranty. If out of warranty and you want to proceed, review and follow the following:
- What you will need?
  - Good Allen wrench set, with ball ends, metric. These can easily be purchased at Harbor Freight.
  - Phillips screw driver.
  - Small and large plastic bags to put parts, screws in. Label the bag for the screws so that you know where they go. Bagging and labeling will save you in case you get distracted or something comes up and it may be some time before you are able to complete the disassembly or re-assembly.

Disassembly of EVO Mount - Azimuth Base

1) Remove the quick release knob by unscrewing it and remove the hand controller holder. Place both in a zip lock bag

Disassembly of EVO Mount - Azimuth Base

2) Using small Allen wrench loosen the **three** Allen screws from both the azimuth ring and the altitude ring. Please each ring in a zip lock bag.

Disassembly of EVO Mount - Azimuth Base

3) Gently pull the rubber eyepiece holder from the azimuth base. There are three rubber pegs that hold this piece in place. Don't just pull it up…use just enough force to work it out.

Disassembly of EVO Mount - Azimuth Base

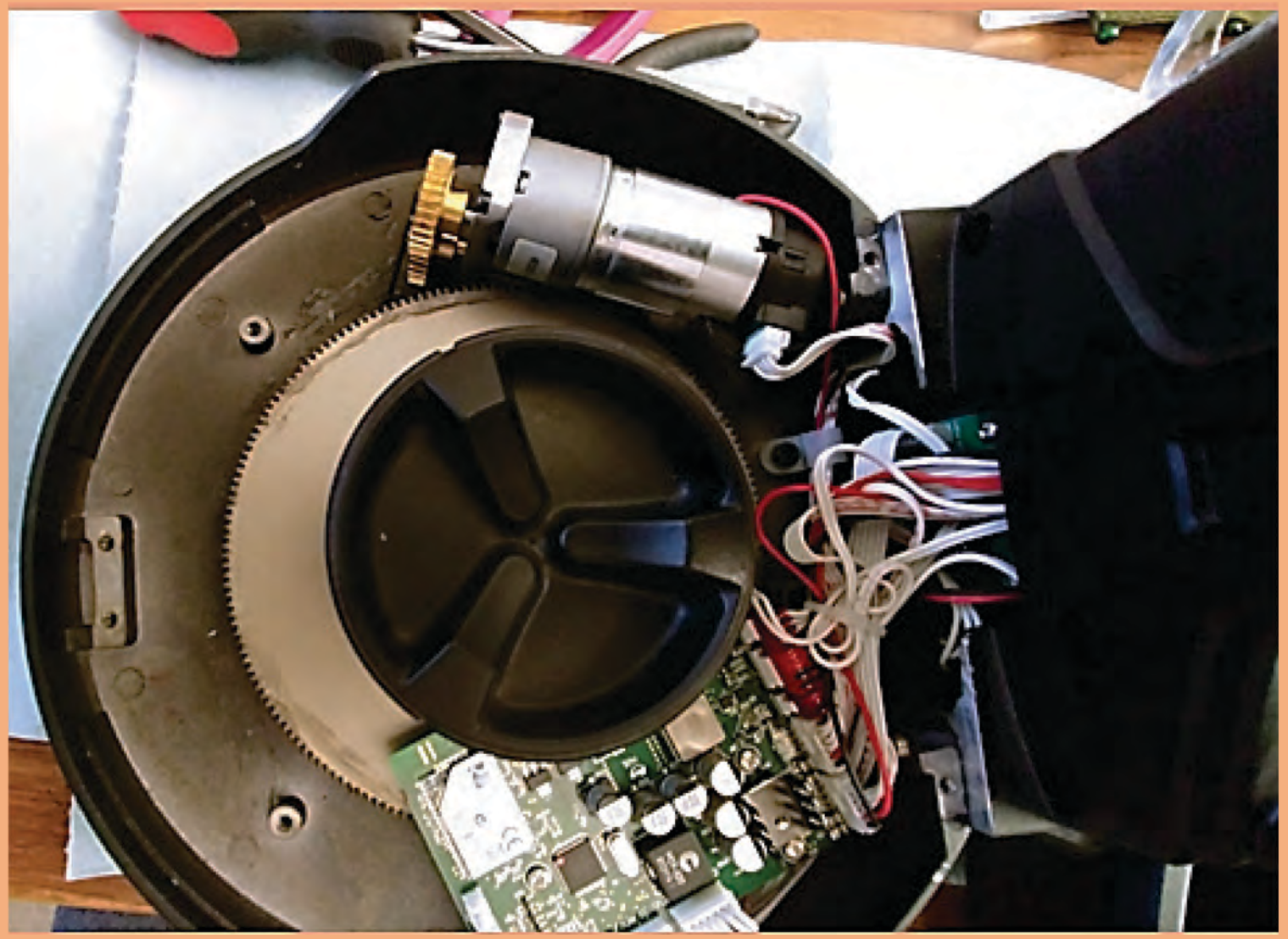
4) Use an Allen wrench to remove the **four hex Allen** screws at the base as well as **two hex Allen** screws close to the mount arm.

Place the 6 Allen screws in a zip lock bag and label the bag.

Disassembly of EVO Mount - Azimuth Base

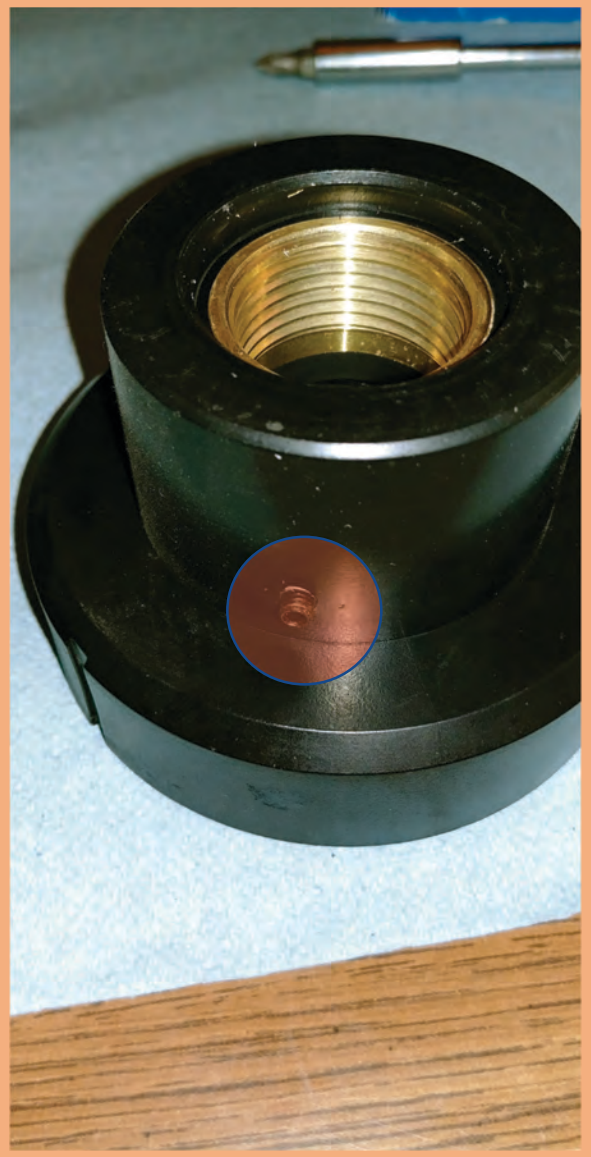
5) Once you remove all the bolts you will see that the base tray is in two pieces. Separate these two and put each in a large zip lock bag.

Disassembly of EVO Mount - Azimuth Base



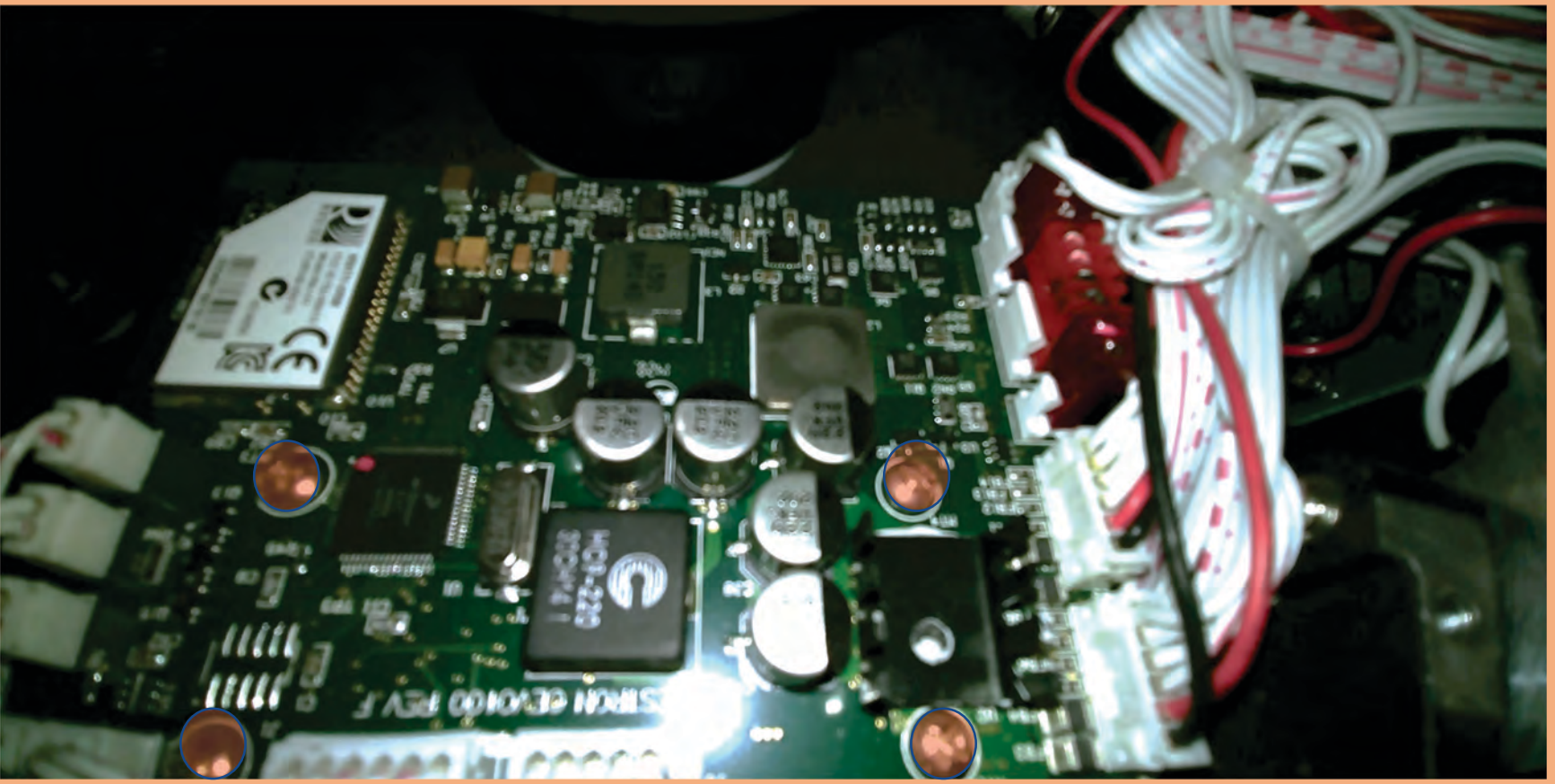
6) You now have the azimuth motor, circuit card and Azimuth clutch knob. You can loosen the Allen screw holding on the clutch (Center). Then clutch knob unscrews completely off.

Disassembly of EVO Mount - Azimuth Base



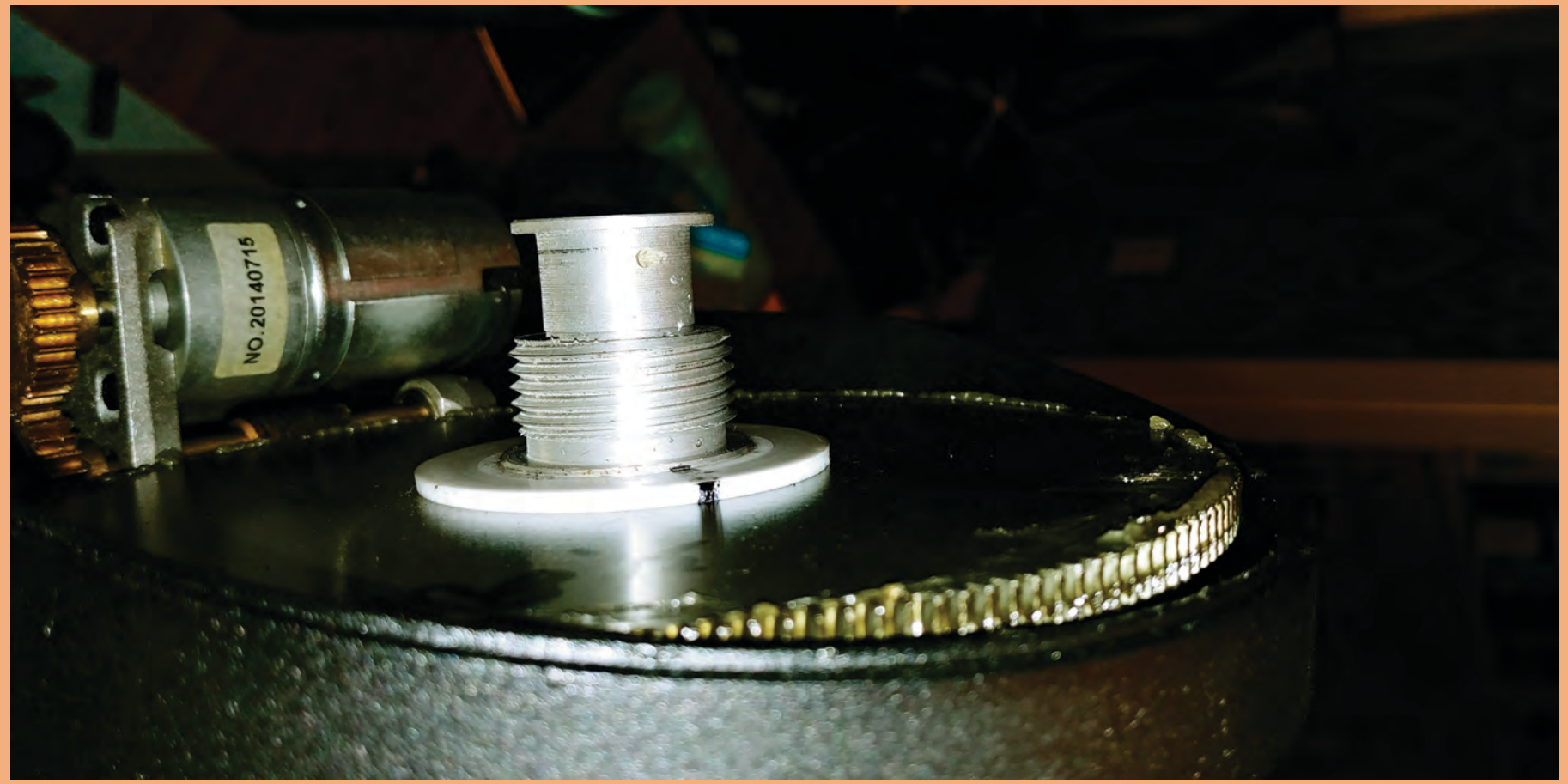
7) You now have the azimuth motor, circuit card and clutch knob. You can loosen the Allen screw holding on the clutch knob (shown actually upside down) (Center). Then this unscrews completely off. If you have removed the Allen Screw, screw back in to prevent loss. Once removed, you can also remove the white spacer. Place the clutch knob and spacer in a separate zip lock bag.

Disassembly of EVO Mount - Azimuth Base



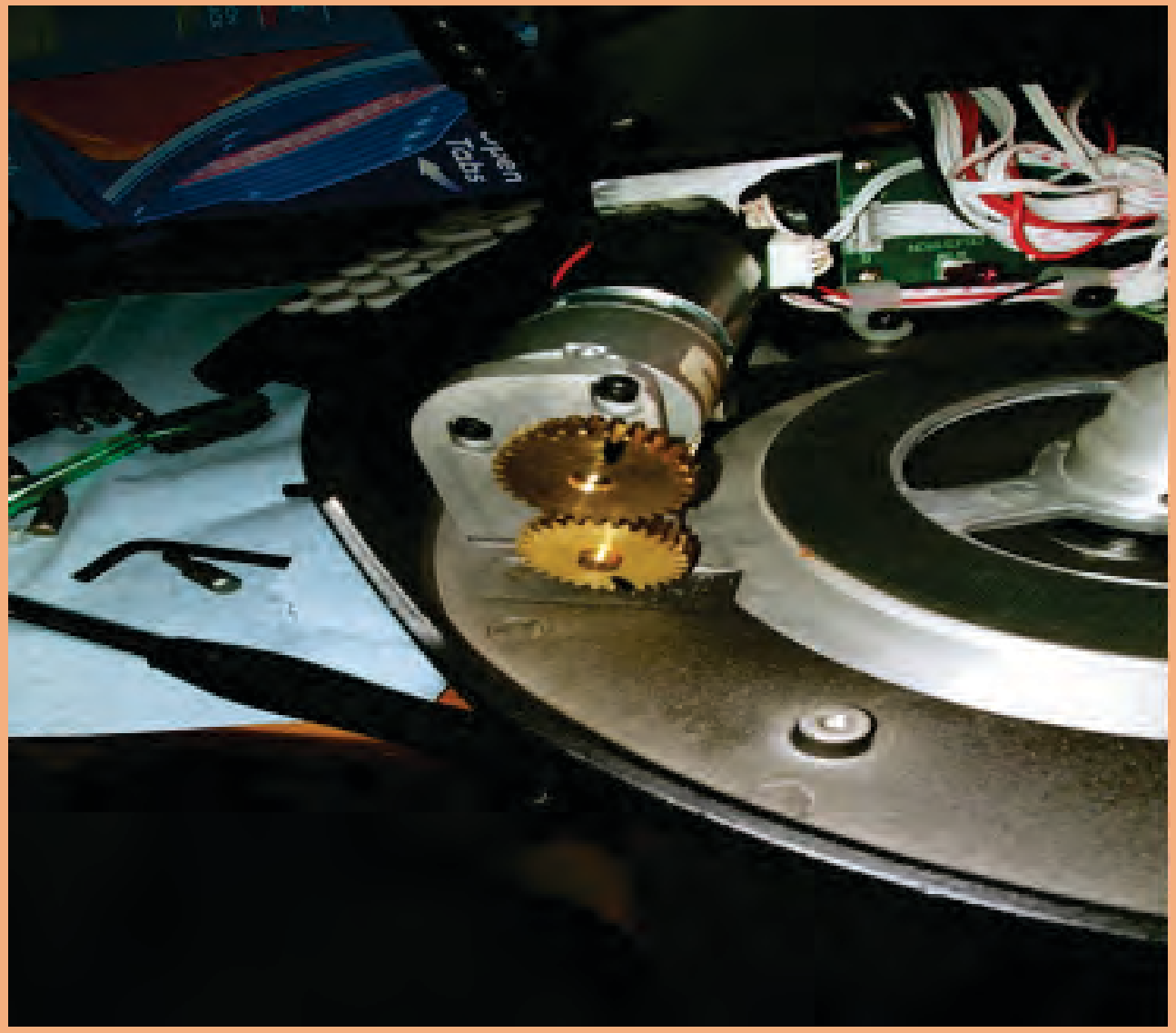
8) In order to remove the large gear at the bottom of the azimuth bay, you need to remove 4 Philips screws (cross-tip) using a Philips screw driver. These screws are not magnetic so be careful when removing the screws. Place each screw in a small zip lock bag and label. You do not need to remove this card, just gently move out of the way to allow you to lift the large wheel from the bay.

Disassembly of EVO Mount - Azimuth Base



9) In order to remove the large gear at the bottom of the azimuth bay, will need to tilt the gear up as shown, but however you remove it, first remove the spacer and be careful as this gear is just touching the worm gear below the motor.

Disassembly of EVO Mount - Azimuth Base



10) With the main gear removed, you now have more room to help you remove the old grease. This marks the end of Azimuth Base disassembly.

Disassembly of EVO Mount – *Altitude Arm*

- You will have a total of four Allen screws holding the two halves of the mount arm. Two on the upper inside arm and two at the bottom near the power switches.
- When you are ready to remove the halves from each other NOTE to be gentle as wires to the LOGO and WIFI lights connect the outer halve. The WIFI light wire is quite short and more easily damaged if not careful.

Disassembly of EVO Mount – Altitude Arm

11) Remove the Allen screws from the inboard side on either side of the OTA mount area.

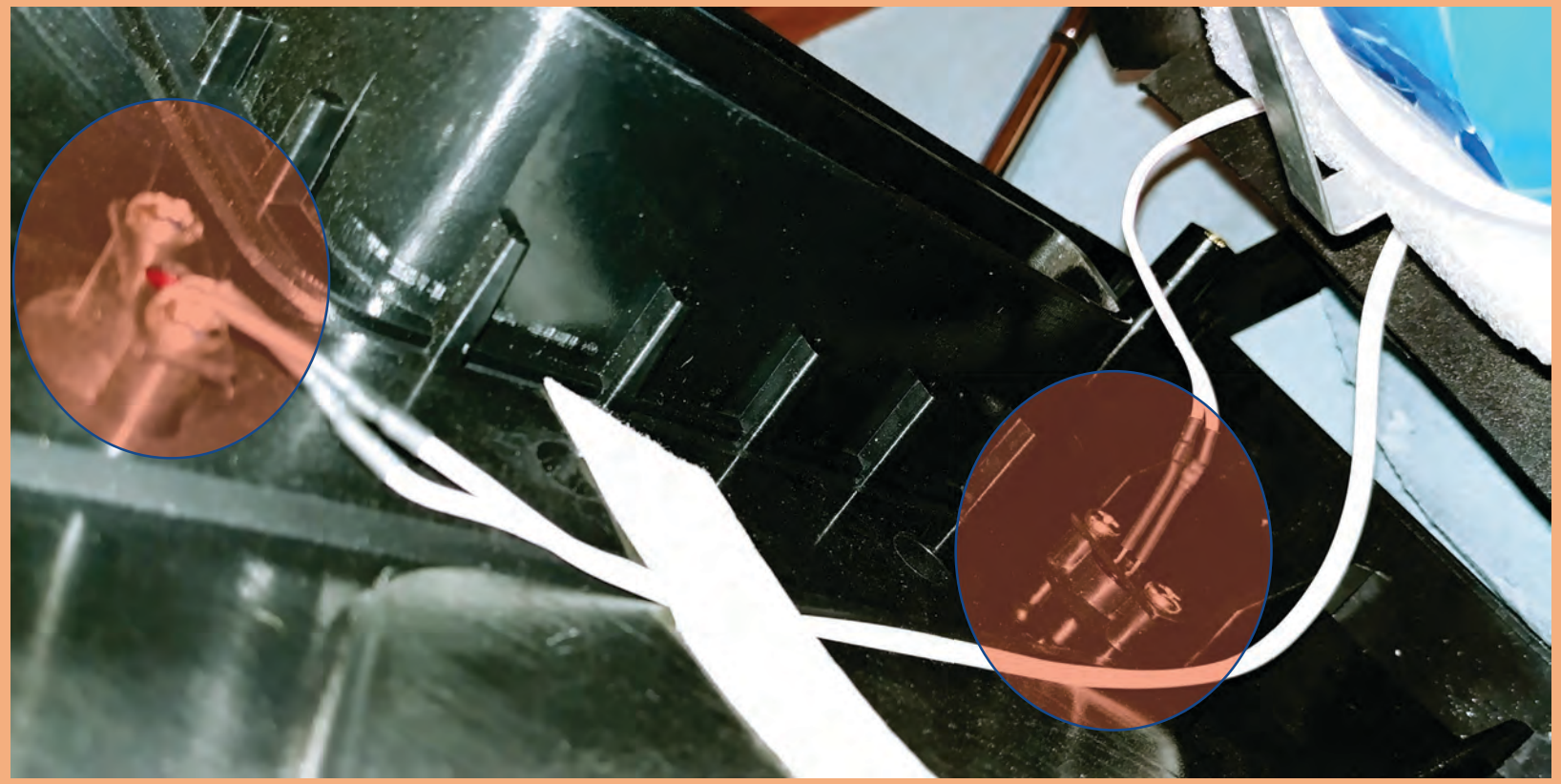
Disassembly of EVO Mount – Altitude Arm

11a NOTE: There are two screws behind the azimuth tray. You need to remove the tray as discussed in slides 4 – 7.

Disassembly of EVO Mount – Altitude Arm

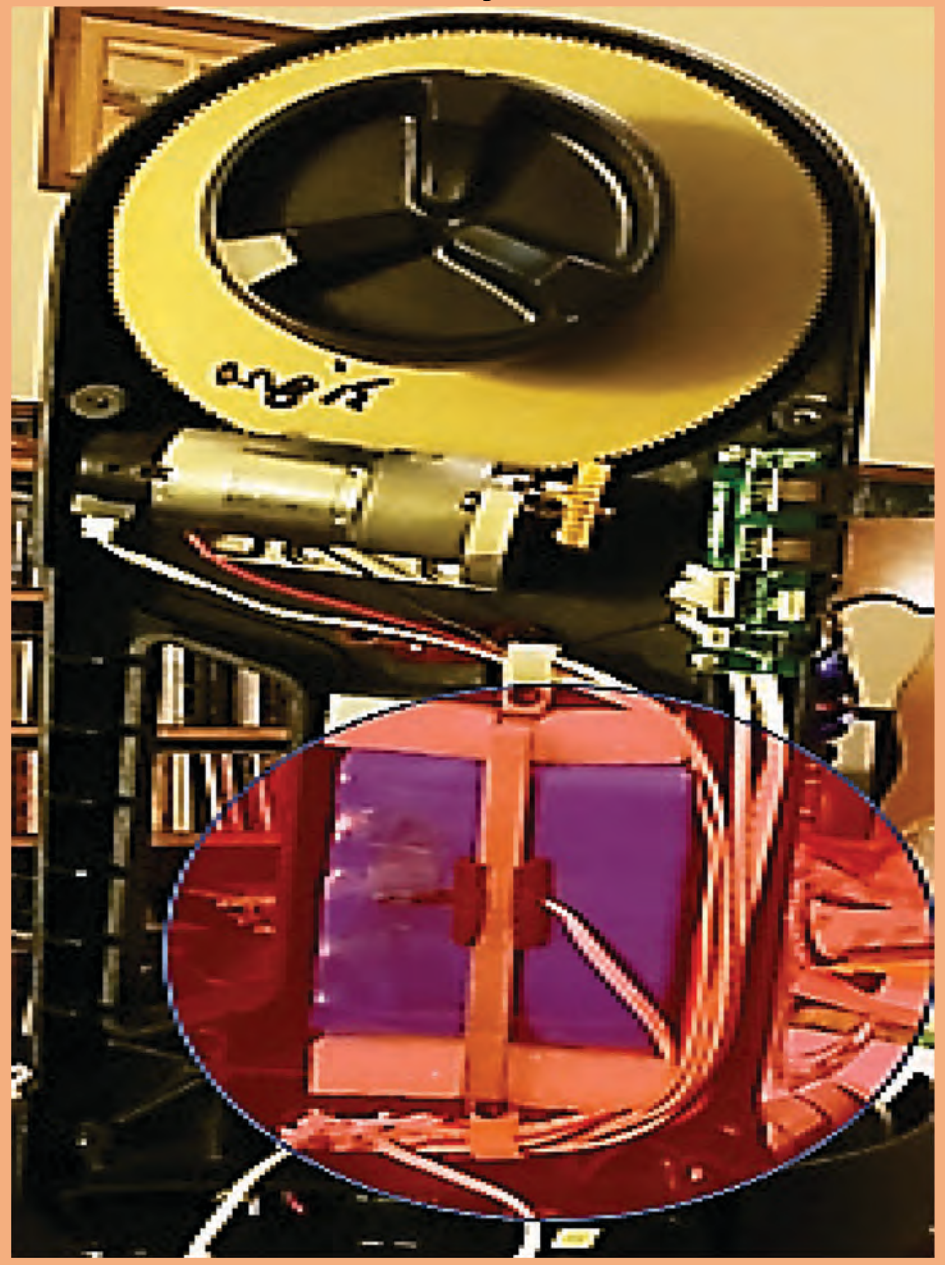
12) Remove the Allen screw left of the power in port and to the right of the power switch. Place screws in small zip lock bag and label. The white tape you see is glow in the dark tape to help locate the power switch in the dark.

Disassembly of EVO Mount – Altitude Arm



13) You are looking at the outboard cover of the mount arm. There is tape holding the wires going to the logo led light. To the right, you can see shorter wires going to the Wi-Fi led light. Use a Philips screw driver to remove all four screws and place in a zip lock bag and label.

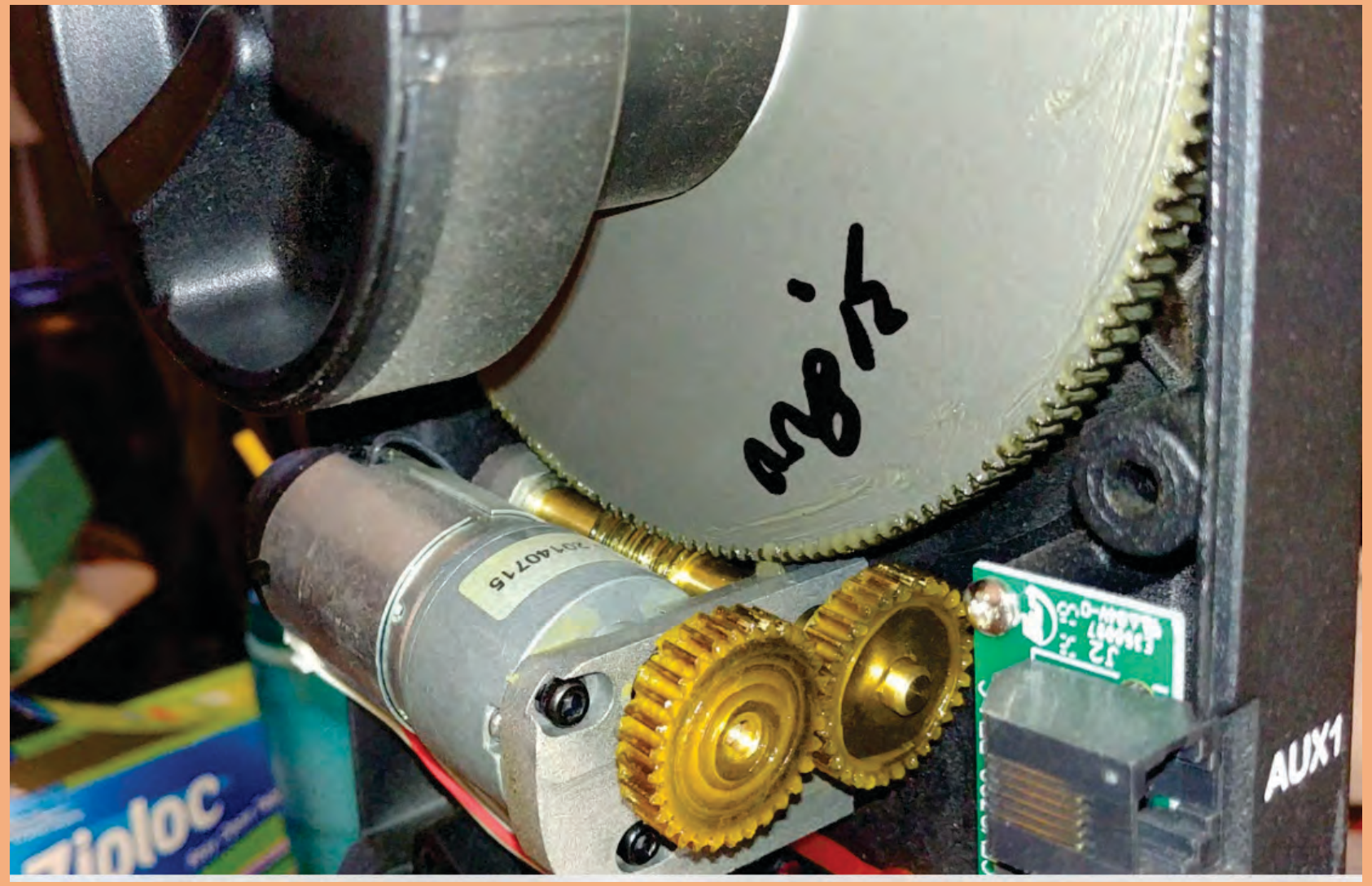
Disassembly of EVO Mount – Altitude Arm



13a) Once you remove the outboard arm cover, you can see the battery and have clear access to it. There are a couple of threads that pertain to getting a replacement battery:

https://www.cloudynights.com/topic/521568-celestron-evolution-simple-repair-and-a-look-inside/

Disassembly of EVO Mount – Altitude Arm



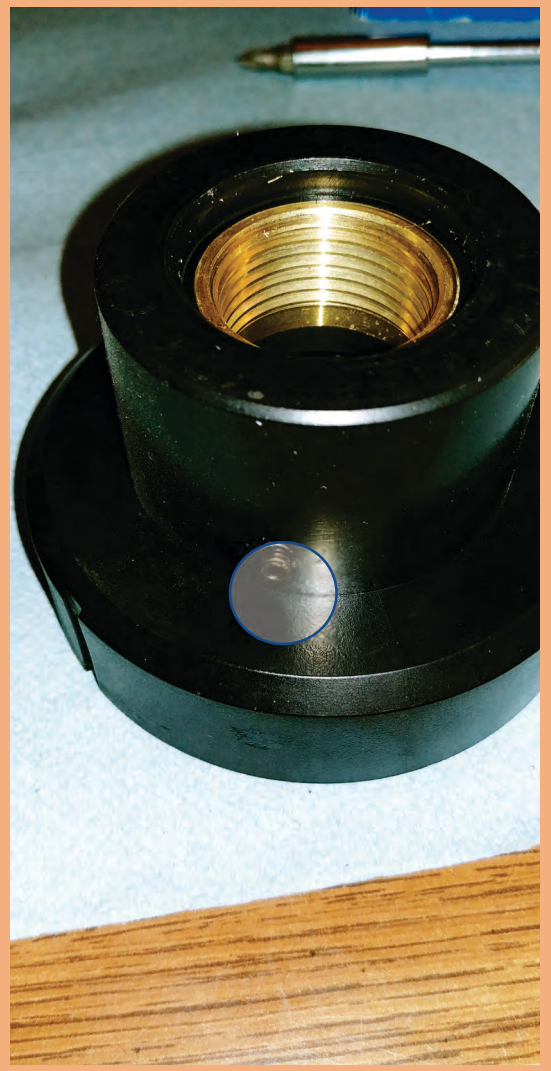
14) From here as you did during azimuth base disassembly, you can remove the clutch knob and lift off the big gear wheel.

This covers general disassembly of the Altitude Arm on your Evolution Mount!

Re-assembly of EVO Mount – *Altitude Arm*

- Before assembly, inspect the Altitude Arm assembly containing the gears for anything that might have been left inside. Clean out any excess grease, metal shavings. If your gearing needs to be lubed and cleaned, reach out to Celestron or the Cloudy Nights Forums for recommended grease.
- If you have removed or separated both arm halves, the altitude clutch knob, main gear wheel, and removed screws holding down the circuit card, you'll need to first ensure the main wheel, white spacer, is firmly seated and to ensure that the gearing (main gear, worm gears, and mesh gears are properly aligned with each other. You want to slowly cycle the gears and then change direction to ensure that the gears do NOT bind. Failure to do so can result in disastrous damage to your mount. You also want to mount on the tripod and check the gearing. In fact, before installing the covers, this is probably the best way to ensue there is no binding. Again, this check is highly recommended to ensure your mount gearing is in its best working order.

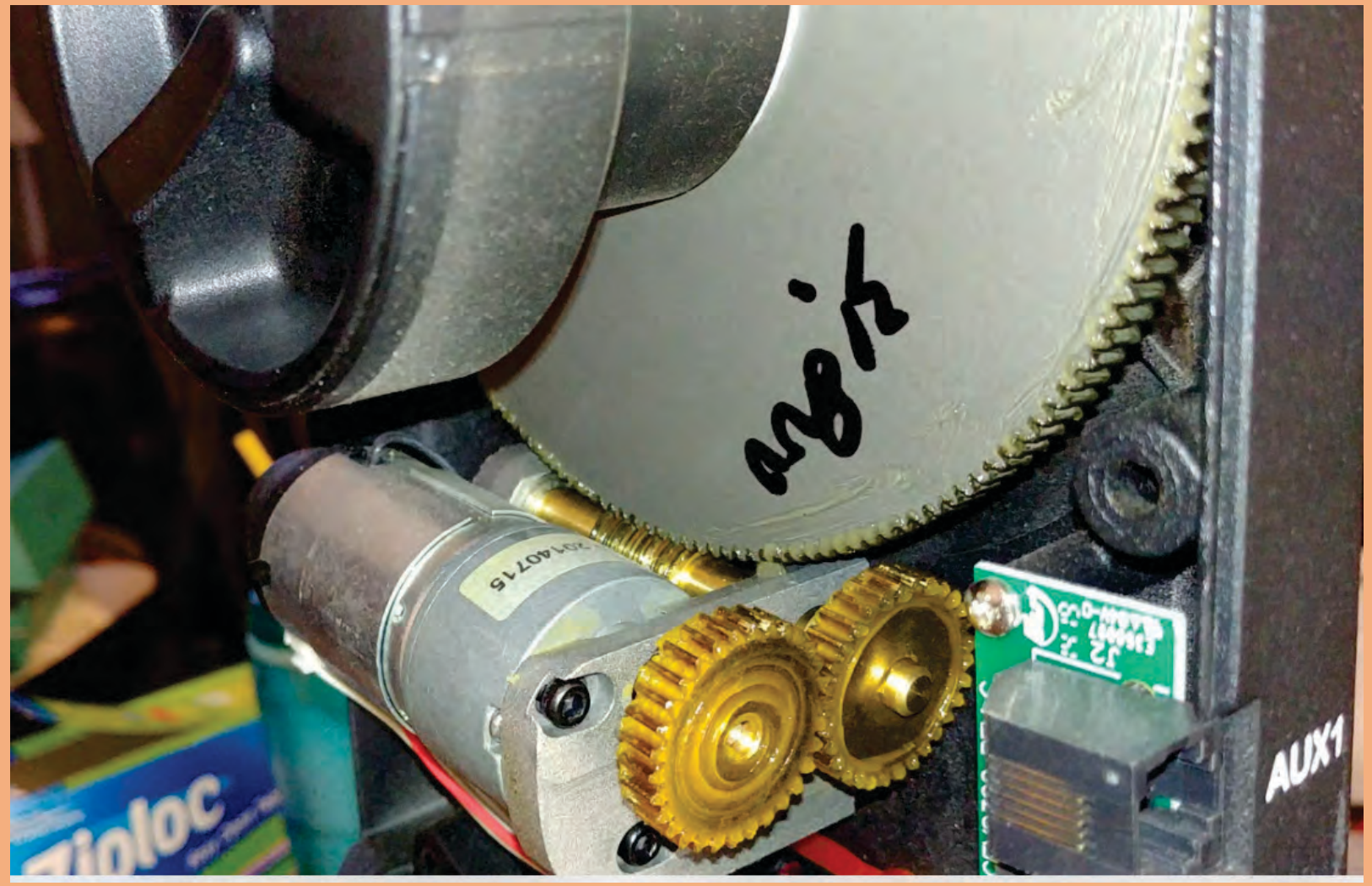
Re-assembly of EVO Mount – *Altitude Arm*



1) Here you see the main gear, the white spacer between the gear and altitude clutch, and that the gear is seated within the worm gear. It is recommended to remove an excess off the main gear and other areas not requiring lubrication.

2) About the clutch knob: Do not tighten the Allen screw too tight or you won't be able to turn the knob. Tighten just enough so that when you loosen the knob, it comes to a stop without any friction. When you tighten, it should move easily until enough pressure is applied to the spacer and gear wheel to prevent slippage. You should test after initial tightening by turning the clutch knob.

Re-assembly of EVO Mount – *Altitude Arm*



3) Before installing the cover, check the operation of the gearing in low gear speed carefully. Ensure the main gear is completely seated at its base. Tighten the clutch knob. Be sure to run in both directions, running through a complete cycle before changing directions. Pay close attention to the operation of the gears. If there is a bind, stop immediately and investigate further and adjust the gears as needed.

Re-assembly of EVO Mount – *Altitude Arm*

4) You will need to carefully reconnect the Celestron Logo light and the Wi-Fi led lights. In the picture, the top led light is the Logo light and the bottom is the Wi-Fi led light. These are four Philips screws. It might be a good idea to use painters' tape to hold down the wire going to the logo light as the 3M tape shown originally held it in place. In the image to the left, you can see when I took this image, I was in the process of installing the screws. You may need to re-orientate this cover to make it easier to install the WI-FI LED light and screws.

Re-assembly of EVO Mount – *Altitude Arm*

5) You can barely make out a lip below the power panel. This gets tucked in. I took some tape to tape the two covers together to help keep the covers in place while ensuring a proper fit here. Once you get this lip in place, you can start installing the screws, but do not tighten until every alt arm screw is started.

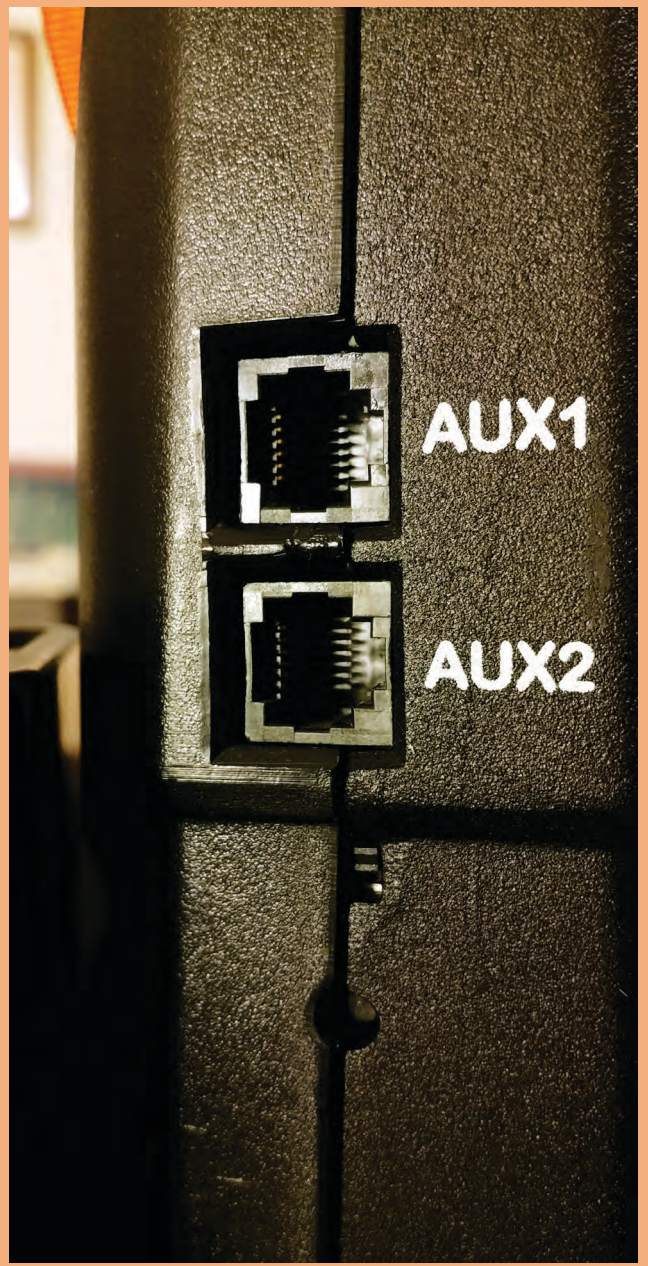
Re-assembly of EVO Mount – *Altitude Arm*

6) Start the screws at the inboard side of the Alt. Arm just below the OTA mount housing area.

Re-assembly of EVO Mount – *Altitude Arm*

7) Start the screws at the inboard base. As you can see, you need to install these two screws before installing the azimuth base as the back of the base covers these two holes.

Re-assembly of EVO Mount – *Altitude Arm*



8) Pay attention to the AUX, reset and Wi-Fi switch to ensure you have alignment with the two halves before tightening the six Allen Screws.

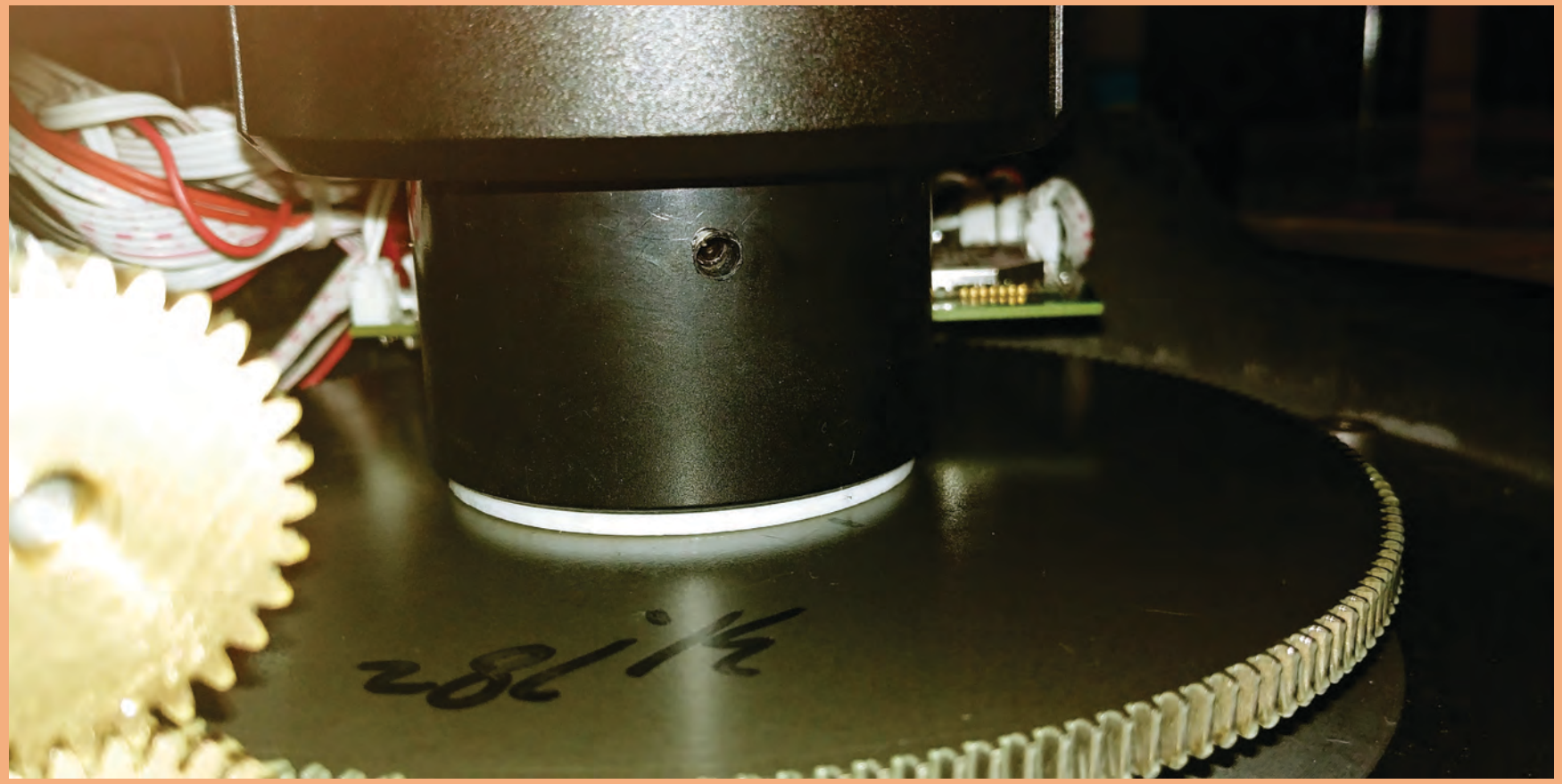
After all the screws are tightened, you have completed the re-assembly of the Altitude Arm.

Re-assembly of EVO Mount – *Azimuth Base*

- Before assembly, inspect the Azimuth Base assembly containing the gears for anything that might have been left. Clean out any excess grease, metal shavings. If your gearing needs to be lubed and cleaned, reach out to Celestron or the Cloudy Nights Forums for recommended grease.
- If you have removed or separated both arm halves, the azimuth clutch knob, main gear wheel, and removed screws holding down the circuit card, you'll need to first ensure the main wheel, white spacer, is firmly seated and to ensure that the gearing (main gear, worm gears, and mesh gears are properly aligned with each other. You want to slowly cycle the gears and then change direction to ensure that the gears do NOT bind. It is best to place the mount in the tripod and secure the tripod bolts as well as the clutches before applying power.

Failure to do so can result in disastrous damage to your mount. You also want to mount on the tripod and check the gearing. In fact, before installing the covers, this is probably the best way to ensue there is no binding. Again, this check is highly recommended to ensure your mount gearing is in its best working order.

Re-assembly of EVO Mount – Azimuth Base



9) Here you see the main gear, the circuit card, the Azimuth clutch knob with the hex Allen screw shown and the white spacer. Be sure stall the a) main gear first, carefully seating on the base. B) Install the clutch knob and tighten the Allen Screw just enough to ensure that you can turn the clutch knob, tighten and loosen and the clutch knob stops. C) Then install the circuit cart with the four Phillips screws.

Be sure to check alignment with the main gear and work gear. Tighten the clutch knob, install mount on tripod, and run the mount at slow speed, checking for any binding

Re-assembly of EVO Mount – Azimuth Base

10) Take the two-piece base tray and place on the azimuth base. We want to basically

Ensure the holes align. Note you will have two longer screws. These screws will go into the two holes shown on the right side.

After all the screws are started, tighten the screws.

Re-assembly of EVO Mount – Azimuth Base

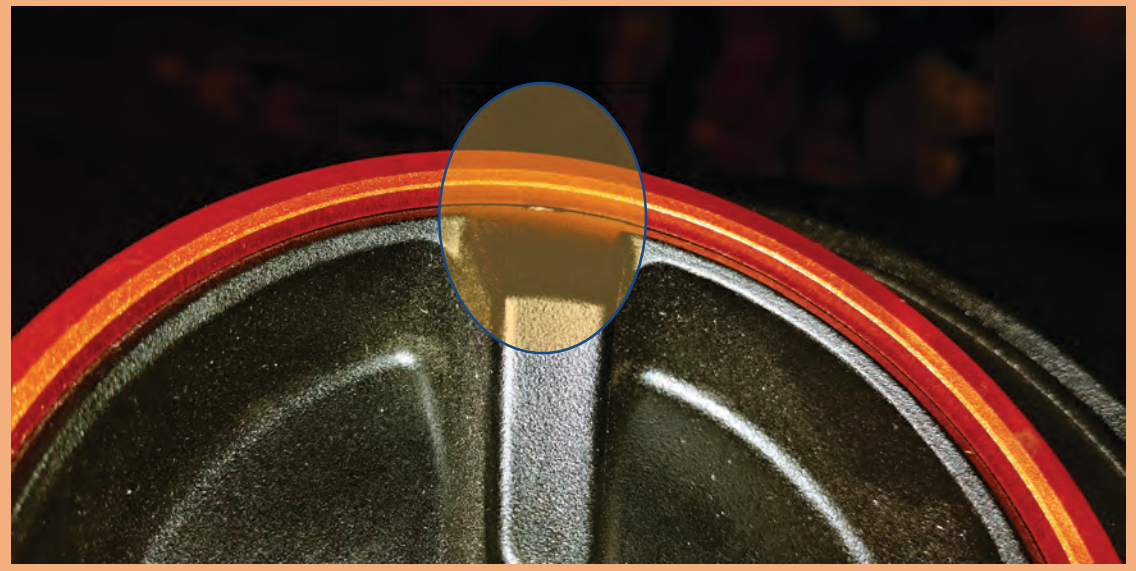
11) Once the base is completely installed, it is time to install the rubber eyepiece tray onto the Azimuth Base.

Note that there are three plugs that need to be inserted into the holes in the azimuth base. The use of Petrolatum (pet) will help insert the plug into each hole. If you cannot push down with your fingers, use the base of a screw driver to put enough pressure over top of the area where each plug goes. I found that applying pet makes this much easier.

Re-assembly of EVO Mount – Azimuth Base

12)Next is time to install the orange clutch retaining rings. Notice there are three screws. Loosen the screws so that they are flush with the inner surface.

Re-assembly of EVO Mount – Azimuth Base



13) Inside the clutch knob, just outboard of the three raised areas of the clutch, you'll see a gap and when you place the retaining ring on the clutch, align the hole in the ring with this gap. Truthfully, you it does not matter, but this is how I chose to install the retaining rings. From the picture taken before disassembly began, this "assumption" would appear to be correct. Be sure to tighten the three Allen screws for each retaining ring. This now completes re-assembly of your Evolution Mount!

Assembly of EVO Mount – Complete

Now that your Evolution Mount Assembly is complete, be sure to again run the motors at various speeds to ensure there is smooth operation. Once the mount is complete, you will notice the acoustics of the mount are different as it is fully assembled. Depending on the reason why you had to disassemble the mount, you will need to perform an operation test. Even in bad weather, you can do a simulated alignment and track using a planetarium software to help say, locate the moon.

Should you have any critiques, questions, concerns or suggestions, please let me know via email: gwzapo@gmail.com or message me via messaging in Cloudy Nights, or respond to the thread that this is posted in.

Cheers,

Gary Zapotoczny

Revisions:

Version 1: November 17, 2018: First version

Version 2: November 18, 2018. Second: Added extra images to better illustrate certain steps and included images that might be of use, such as picture of battery. Improved flow of certain steps and corrected errors in spelling of components.

Version 3: Rewording of slide 1, 2, brightened image on slide 6, highlighted Allen screw on slide 9, edited wording on slide 29. Left justified all paragraphs. Enlarged the images for slides 8, 12, 18, 33.