

**PRINCE GEORGE ASTRONOMICAL SOCIETY
ROYAL ASTRONOMICAL SOCIETY OF CANADA
PRINCE GEORGE CENTRE**

**7365 Tedford Road
Prince George, BC
V2N 6S2**

Robotic Telescope Project (RTP) Minutes

December 2, 2021

Meeting Number: RTP005

Date: December 2, 2021

Location: Zoom Meeting

Chairperson: Malhar Kendurkar

Recording Secretary: Glen Harris

Committee Members present: Bob, Malhar, Glen

Meeting Called to Order at 7:00 p.m.

1. Approval of Minutes of RTP004

Motion: To accept the meeting minutes of RTP004 November 19, 2021.

Moved: Malhar

Seconded: Glen

Carried

2. Old Business

- Telus fiber installation deferred to December 1.
- 1.5" x 10' thin wall conduit purchased at Home Depot.
- Maurice will have his dad bend the dome slot wiring conduit in the next couple of weeks.
- Estimate drawn up for lower dome slot electric actuators. This cost was not factored into the gaming fund request. Based on my calculations we require:
2 - PA17 Heavy Duty Actuators @ \$429CAD ea. = \$858CAD
The Actuators come with adjustable limit switches.
4 - BRK-17 Heavy Duty Mounting Brackets @ \$30CAD ea. = \$120 CAD
1 - (120VAC to 24VDC 30A) RA39 Controller @ \$152USD = \$192CAD
Total = ~\$1200CAD.
- 12" step ladder purchased through Home Hardware. Delivery in two weeks.
- Dan Gray of Sidereal Technologies provided a solution for restarting a stalled telescope remotely. All you have to do is click on the bottom button in the SiTech virtual hand pad window.
- Homing sensors purchased through Amazon. 4-6 weeks delivery.
- Sensor ring fabricated and test mounted on RA axis.

Actionable items:

- AC-DC adapter available to replace DSLR battery.
- Update Alcyone dome control update via Teamviewer – Establish time.
- Mirror cover plans from Dave Lane **Malhar**
- Automatic shutter closure in bad weather. **Malhar**
- Polar alignment. **Bob, Malhar**
- Accurate method of parking the telescope. **Bob, Malhar**
- Sensors **Gil**

3. New Business

Malhar's report

- Emailed Ajai about connecting weather station with Website.
- Setting up time with Jean-Bruno to resolve the FTP issue.
- Infrared Camera for inside dome - Link attached.
- Dave Lane zoom meeting with the committee conducted. Lots of insight as to the complexity of our task.

Glen's report

- Joined the SiTech user group which/that/who confirmed our existing controller supports the homing function. There is no need to purchase the expensive alternative.
- Waiting for Maurice's dad to bend the 1.25" sky hook conduit.
- 12' step ladder is on site and stable when tied off to the dome bearing supports.
- Dave Lane's software includes a reservation/user schedule program so I don't have to work on that.
- I will create a new user profile on Alcyone for telescope control users as time allows.
- Telus fiber installation was completed on Dec 1. Average download speed is 750 mB/sec, average upload speed is 200 mB/sec.
- Additional serial ports for dome shutter control are required. See below. All existing serial ports on Alcyone are in use.

The screenshot shows a web browser window displaying the StarTech.com website. The page is for a "4 Port RS232 PCI Express Serial Card w/ Breakout Cable". The product ID is PEX45553B. The price is listed as \$195.99CAD. There is a "1" in a quantity box and an "Add to cart" button. The page also features a "Where to buy" button and a "Show more" link. The website header includes navigation links for "Product" and "Support", and a search bar. The browser's address bar shows the URL "https://www.startech.com/en-ca/cards-adapters/pex45553b".

- Parts for the electronic shutter controller will cost ~\$350. Cabling, split loom tubing, and magnetic limit switches is another \$200.
- Investigating the possibility of attaching a portion of the lower dome shutter to the upper dome shutter.
- Magnetic limit switches are in transit from Amazon.
- Postpone construction of mirror covers.
- Postpone automation of lower slot door.

Current actionable items

Malhar:

- Polar alignment with Bob.
- TPoint alignment with Bob.
- Follow up with Ajai and Jean-Bruno.

Glen:

- Telescope user profile on Alcyone.
- Complete dome skyhook wiring.

Gil:

- Homing sensors (work with Bob).

Bob:

- Homing sensors (work with Gil).
- Continue fabricating sensor mounting hardware and cowlings.
- Polar alignment with Malhar.
- TPoint alignment with Malhar.

Task Priority:

- TPoint alignment
- Polar alignment
- Guiding
- Slot motor wiring
- Telescope homing
- Dome rotation limit switches
- FTP for weather station, AllSky camera and infrared camera
- Build dome slot motor controller
- Software update
- DSLR camera operation
- Flip mirror automation
- Mirror cover mechanism

Outstanding items:

- If shutter plans are provided, build it ourselves. **Bob**
- DSLR image link to website. **Glen**
- All Sky weather camera link to website **Glen**
- Weather station link to website. **Glen**
- Infrared camera link to website. **Glen**

4. Date, Time, and Location of the next Robotic Telescope Project committee meeting

- The next committee meeting (RTP006) will be held on Thursday, December 16 starting at 7:00 pm using Zoom.

5. Adjournment: Meeting adjourned at 8:45pm.