

MoonStalker messages

Introduction

This document describes the messages being exchanged between the Android Control and the Arduino based Drive unit.

< - start message delimiter

> - end message delimiter

All messages exchanged must start with the start message delimiter and end with the end message delimiter, e.g. <BTRY?> to query the battery voltage. Carriage return '\r' and newline '\n' can be sent, but will be ignored and removed from the text stream. All text is ASCII encoded.

Android Control is the initiator of messages and Arduino Drive unit responds to the messages to acknowledge receipt and provide responses. The only exception are the error and warning messages, which can be sent to the Android Control unit unsolicited.

Control messages

Move

<MV a b>

a - horizontal steps

b - vertical steps

Move the telescope in horizontal and vertical direction. While RDY message is not returned from Arduino, all move actions made by MoonStalker are blocked.

Response:

<NOT_RDY> - Drive unit is still executing the previous movement

<MV_ACK a b> - Start movement with the specified parameters

Move start

<MVS d>

d - direction (1 = UP, 2 = down, 3 = left 4 = right)

Start moving the telescope in the specific direction. It keeps moving until MVE message is received or ERROR happens.

Move end

<MVE>

Stop moving the telescope after started when MVS was received.

Status messages

Status

<MVST?>

Get move status of the telescope, whether the telescope is still moving or if it is ready to accept new move command.

Response:

<RDY> - Drive unit is ready to accept new move command

<NOT_RDY> - Drive unit is still executing the previous move command and is not ready yet to accept new move commands

Battery

<BTRY?>

Request to Arduino to return the battery voltage in mV.

Response:

<BTRY voltage>

voltage - value of the current voltage of Telescope battery in millivolts.

Reply from Arduino give information of current voltage of telescope battery.

Error Messages

Error messages can be sent to the Android Control unit unsolicited.

<ERROR error_msg>

When something unexpected happens on telescope, the reason for error is returned from Arduino.

ERROR MESSAGE	MEANING
END_LIMIT_SW_TRIG	End limit switch has been triggered

Warning messages

Warning messages can be sent to the Android Control unit unsolicited.

<WARNING warning_msg>

WARNING MESSAGE	MEANING
BTRY_LOW	Battery voltage is low