# Proposed/Draft Spectroscope Command Protocol

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The intent of this document is to formalize/standardize the command protocol for use with the various microcontroller devices incorporated into a spectroscope and support equipment, independent of the actual device being commanded. A simple ASCII code/characters will help to provide desperate programs the ability to intercommunicate with a common set of command codes, thereby allowing for modular programming schemes.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* LHiRes III lamp control protocol \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Command Function

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c (ON) calibration relay ONLY

C (ON) calibration relay with associated LED functional

d or D (OFF) calibration relay and LED

f (ON) flat relay ONLY

F (ON) flat relay with associated LED functional

g or G (OFF) flat relay and LED

b (ON) both calibration and flat relays ONLY

B (ON) both calibration and flat relays with associated LEDs functional

a or A (OFF) both relays and LEDs

O Everything OFF

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* LowRes(x) control protocol \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Command Function

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LRc (ON) LowRes calibration lamp ONLY

LRC (ON) LowRes calibration lamp AND local LED

LRd or LRD (OFF) LowRes calibration lamp AND local LED

LRf (ON) LowRes flat lamp ONLY

LRF (ON) LowRes flat lamp AND local LED

LRg or LRG (OFF) LowRes flat lamp AND LED

LRLO Every lamp and local LED OFF

LRT1 (Request) temperature device #1 value

LRT2 (Request) temperature device #2 value

LRT3 (Request) temperature device #3 value

LRT4 (Request) temperature device #4 value

LRHOn (ON) heating element

LRHOff (OFF) heating element

LRFIxxxx (IN) main focuser IN xxxx steps (Ex.: LRFI2025 move in 2025 steps)

LRFOxxxx (OUT) main focuser OUT xxxx steps

LRCI (IN) move the calibration lamp mirror IN to program stop

LRCO (OUT) move the calibration lamp mirror OUT to program stop

LRPA (GO TO) horizontal paralactic angle gravity vector, then release

LRRxxx (GO TO) rotator angle xxx (Ex.: LRR120 rotate to 120 degree position)

(It was decided earlier that we need not automate the other focusing devices)