

Id	File	1st	2nd	Cmd	Indi tested	PicAstro	Description	Returns
1	Command.ino://	6		6			Ack	Returns P A
2	Command.ino://	%	B	:%BD#			Get Dec Antibracklash	Returns d#
3	Command.ino://	%	B	:%BR#			Get RA Antibracklash	Returns d#
4	Command.ino://	\$	B	:\$BDddd#			Set Dec Antibracklash	Return: 0 on failure 1 on success
5	Command.ino://	\$	B	:\$BRddd#			Set RA Antibracklash	Return: 0 on failure 1 on success
6	Command.ino://	\$	Q	:\$QZ-#			Turn PEC Off	
7	Command.ino://	\$	Q	:\$QZ!#			Save PEC data / settings to EEPROM	
8	Command.ino://	\$	Q	:\$QZ?#			Get PEC Status	Returns : I Ignore PEC P Playing, r Getting ready to play R Record, r Getting ready to record
9	Command.ino://	\$	Q	:\$QZ/#			Start recording PEC	
10	Command.ino://	\$	Q	:\$QZ+#			Turn PEC On	
11	Command.ino://	\$	Q	:\$QZZ#			Clear PEC data	
12	Command.ino://	A	?	:A?#			Align status	Returns nnn#
13	Command.ino://	A	+	:A+#			Manual Alignment, set target location	Return: 0 on failure 1 on success
14	Command.ino://	A	n	:An#			Start Telescope Manual Alignment Sequence N=1 one star N=2 two stars N=3 three stars	Return: 0 on failure 1 on success
15	Command.ino://	A	W	:AW#			Align Write to EEPROM	Return: 0 on failure 1 on success
16	Command.ino://	B	-	:B-#			Decrease Reticule Brightness	none
17	Command.ino://	B	+	:B+#			Increase reticule Brightness	none
18	Command.ino://	C	M	:CM#		x	Synchronize the telescope with the current database object (as above)	N/A#
19	Command.ino://	C	S	:CS#			Synchronize the telescope with the current right ascension and declination coordinates	none
20	Command.ino://	D	#	:D#			returns an "0x7f#" if the mount is moving, otherwise returns "#"	returns \0x7F#
		F	-	:F-#		x	Focus Out	
		F	+	:F+#		x	Focus In	
		F	F	:FF#		x	Focus Fast	
		F	Q	:FQ#		x	Focus Quit	
		F	S	:FS#		x	Focus Slow	
21	Command.ino://	G	A	:GA#			Get Telescope Altitude	Returns: sDD*MM# or sDD*MM'SS# (based on precision setting)
22	Command.ino://	G	a	:Ga#			Get Local Time in 12 hour format	Returns HH:MM:SS#
23	Command.ino://	G	C	:GC#			Get the current date	

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24	Command.ino://	G	D	:GD#		x	Get Telescope Declination	Returns: sDD*MM# or sDD*MM'SS# (based on precision setting)
25	Command.ino://	G	d	:Gd#			Get Currently Selected Target Declination	Returns: sDD*MM# or sDD*MM'SS# (based on precision setting)
26	Command.ino://	G	G	:GG#			Get UTC offset time	Returns sHH#
27	Command.ino://	G	g	:Gg#			Get Current Site Longitude	Returns DDD*MM#
28	Command.ino://	G	h	:Gh#			Get Horizon Limit	Returns sDD
29	Command.ino://	G	L	:GL#			Get Local Time in 24 hour format	Returns HH:MM:SS#
30	Command.ino://	G	M	:GM#			Get Site 0 Name	Returns sss...#
31	Command.ino://	G	m	:Gm#			Gets the meridian pier-side	Returns : N#, E#, W#
32	Command.ino://	G	N	:GN#			Get Site 1 Name	Returns sss...#
33	Command.ino://	G	O	:GO#			Get Site 2 Name	Returns sss...#
34	Command.ino://	G	o	:Go#			Get Overhead Limit	Returns sDD*
35	Command.ino://	G	P	:GP#			Get Site 3 Name	Returns sss...#
36	Command.ino://	G	R	:GR#		x	Get Telescope RA	Returns: HH:MM.T# or HH:MM:SS# (based on precision setting)
37	Command.ino://	G	r	:Gr#			Get current/target object RA	Returns: HH:MM.T# or HH:MM:SS# (based on precision setting)
38	Command.ino://	G	S	:GS#			Get the Sidereal Time	Returns HH:MM:SS#
39	Command.ino://	G	T	:GT#			Get tracking rate	returns dd.ddddd#
40	Command.ino://	G	t	:Gt#			Get Current Site Latitude	Returns sDD*MM#
41	Command.ino://	G	U	:GU#			Get telescope Status	Returns : String where N not slewing H at home P or p Parked/not P F Park Failed I Park in Progress R PEC Recorded G Guiding S GPS PPS Synced
42	Command.ino://	G	V	:GVD#			Get Telescope Firmware Date	MM DD YY#
43	Command.ino://	G	V	:GVN#			Get Telescope Firmware Number	1,0b4
44	Command.ino://	G	V	:GVP#			Get Telescope Product Name	On Step
45	Command.ino://	G	V	:GVT#			Get Telescope Firmware Time	HH:MM:SS#
46	Command.ino://	G	X	:GXnn#			Get OnStep value	

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47	Command.ino://	G	Z	:GZ#			Get telescope azimuth	Returns: DDD*MM# or DDD*MM'SS# (based on precision setting)
48	Command.ino://	h	C	:hC#			Move to Home position	Return: 0 on failure 1 on success
49	Command.ino://	h	F	:hF#			Set to Home	Return: 0 on failure 1 on success
50	Command.ino://	h	P	:hP#			Move to Park Position	Return: 0 on failure 1 on success
51	Command.ino://	h	Q	:hQ#			Set Park Position	Return: 0 on failure 1 on success
52	Command.ino://	h	R	:hR#			Restore from Park to Operation	Return: 0 on failure 1 on success
53	Command.ino://	L	!	:L!#			Clear library (all catalogs)	Return name#
54	Command.ino://	L	\$	:L\$#			Move to catalog name record	Return: 0 on failure 1 on success
55	Command.ino://	L	B	:LB#			Find previous object and set it as the current target object.	none
56	Command.ino://	L	C	:LCnnnn#			Move to Catalog item number nnnn	none
57	Command.ino://	L	D	:LD#			Clear current record	none
58	Command.ino://	L	I	:LI#			Get Object Information	none
59	Command.ino://	L	L	:LL#			Clear current catalog	none
60	Command.ino://	L	N	:LN#			Find next deep sky target object subject to the current constraints.	none
61	Command.ino://	L	o	:Lonn#			Select Library catalog where nn specifies user catalog number	Return: 0 on failure 1 on success
62	Command.ino://	L	R	:LR#			Get Object Information including RA and Dec, with advance to next Record	return name, type, RA, DEC
63	Command.ino://	L	w	:Lwsss,ttt#			Write Object Information including current target RA,Dec to next available empty record sss=name ttt=type UNK, OC, GC, PN, DN, SG, EG, IG, KNT, SNR, GAL, CN, STR, PLA, CMT, AST	Return: 0 on failure 1 on success
64	Command.ino://	M	A	:MA#			Goto the target Alt and Az	Returns : 0 success 1 bellow horizon 2 no object 4 unreachable 5 not aligned 6 outside limits
65	Command.ino://	M	e	:Me#		x	Move Telescope East or West at current slew rate	none
66	Command.ino://	M	g	:Mgdnnnn#			Pulse guide command at current rate for nnnn milliseconds (d=n, s, e, w)	none
67	Command.ino://	M	n	:Mn#		x	Move Telescope North or South at current slew rate	none

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68	Command.ino://	M	P	:MP#			Goto the Current Position for Polar Align 0=Goto is Possible 1=Object below horizon Outside limits, below the Horizon limit 2=No object selected Failure to resolve coordinates 4=Position unreachable Not unparked 5=Busy Goto already active 6=Outside limits Outside limits, above the Zenith limit	Returns: N
69	Command.ino://	M	s	:Ms#		x	Move Telescope East or West at current slew rate	none
70	Command.ino://	M	S	:MS#		x	Goto the Target Object	Returns : 0 success 1 below horizon 2 no object 4 unreachable 5 not aligned 6 outside limits
71	Command.ino://	M	w	:Mw#		x	Move Telescope North or South at current slew rate	none
72	Command.ino://	Q	#	:Q#		x	Halt all slews, stops goto	none
73	Command.ino://	Q	e	:Qe#		x	Halt east/westward Slews	none
74	Command.ino://	Q	n	:Qn#		x	Halt north/southward Slews	none
75	Command.ino://	Q	s	:Qs#		x	Halt north/southward Slews	none
76	Command.ino://	Q	w	:Qw#		x	Halt east/westward Slews	none
77	Command.ino://	R	C	:RC#		x	Set Slew rate to Centering rate (2nd slowest) 8X	none
78	Command.ino://	R	G	:RG#		x	Set Slew rate to Guiding Rate (slowest) 1X	none
79	Command.ino://	R	M	:RM#		x	Set Slew rate to Find Rate (2nd Fastest) 24X	none
80	Command.ino://	R	n	:Rn#			Set Slew rate to n, where n=0..9 0 0,25 x 1 0,5 x 2 1 x 3 2 x 4 4 x 5 8 x 6 16 x 7 24 x 8 40 x 9 60 x	none
81	Command.ino://	R	S	:RS#		x	Set Slew rate to max (fastest) ?X (1/2 of MaxRate)	none
82	Command.ino://	S	a	:SasDD*MM'SS#			Set target object altitude to sDD*MM# or sDD*MM'SS# (based on precision setting)	Return: 0 on failure 1 on success
83	Command.ino://	S	a	:SasDD*MM#			Set target object altitude to sDD*MM# or sDD*MM'SS# (based on precision setting)	Return: 0 on failure 1 on success
84	Command.ino://	S	B	:SBn#			Set Baud Rate n for Serial-0, where n is an ASCII digit (1..9) with the following interpretation 0=115.2K, 1=56.7K, 2=38.4K, 3=28.8K, 4=19.2K, 5=14.4K, 6=9600, 7=4800, 8=2400, 9=1200	Return: 0 on failure 1 on success
85	Command.ino://	S	C	:SCMM/DD/YY#				Return: 0 on failure 1 on success
86	Command.ino://	S	d	:SdsDD*MM:SS#			Set target object declination to sDD*MM or sDD*MM:SS depending on the current precision setting	Return: 0 on failure 1 on success

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87	Command.ino://	S	d	:SdsDD*MM#			Set target object declination to sDD*MM or sDD*MM:SS depending on the current precision setting	Return: 0 on failure 1 on success
88	Command.ino://	S	g	:SgsDDD*MM#			Set current Site Longitude	Return: 0 on failure 1 on success
89	Command.ino://	S	G	:SGsHH:MM#			(where MM is 30 or 45) Set the number of hours added to local time to yield UTC	Return: 0 on failure 1 on success
90	Command.ino://	S	G	:SGsHH#			where MM is 30 or 45) Set the number of hours added to local time to yield UTC	Return: 0 on failure 1 on success
91	Command.ino://	S	h	:ShsDD#			Set the lowest elevation to which the telescope will goTo -30.. +30	Return: 0 on failure 1 on success
92	Command.ino://	S	L	:SLHH:MM:SS#			Set Local Time	Return: 0 on failure 1 on success
93	Command.ino://	S	M	:SM<string>#			Set Site 0 Name	Return: 0 on failure 1 on success
94	Command.ino://	S	N	:SN<string>#			Set Site 1 Name	Return: 0 on failure 1 on success
95	Command.ino://	S	O	:SO<string>#			Set Site 2 Name	Return: 0 on failure 1 on success
96	Command.ino://	S	o	:SoDD#			Set Overhead Limit +60 .. +90	Return: 0 on failure 1 on success
97	Command.ino://	S	P	:SP<string>#			Set Site 3 Name	Return: 0 on failure 1 on success
98	Command.ino://	S	r	:SrHH:MM:SS#		x	Set target object RA to HH:MM.T or HH:MM:SS (based on precision setting)	Return: 0 on failure 1 on success
99	Command.ino://	S	r	:SrHH:MM.T#		x	Set target object RA to HH:MM.T or HH:MM:SS (based on precision setting)	Return: 0 on failure 1 on success
100	Command.ino://	S	S	:SSH:MM:SS#			Sets the local (apparent) sidereal time to HH:MM:SS	Return: 0 on failure 1 on success
101	Command.ino://	S	T	:STdd.ddddd#		x	Set Sidereal rate	Return: 0 on failure 1 on success
102	Command.ino://	S	t	:StsDD*MM#			Set Current Site Latitude	Return: 0 on failure 1 on success
103	Command.ino://	S	X	:SXnn,VVVVVV...#			Set OnStep value	Return: 0 on failure 1 on success

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104	Command.ino://	S	z	:SzDDD*MM#			Sets the target Object Azimuth	Return: 0 on failure 1 on success
105	Command.ino://	T	-	:T-#		x	Master sidereal clock slower by 0.1 Hertz (stored in EEPROM)	none
106	Command.ino://	T	+	:T+#		x	Master sidereal clock faster by 0.1 Hertz (I use a fifth of the LX200 standard, stored in EEPROM)	none
107	Command.ino://	T	d	:Td#			Tracking disable (OnStep only, replies 0/1)	Return: 0 on failure 1 on success
108	Command.ino://	T	e	:Te#			Tracking enable (OnStep only, replies 0/1)	Return: 0 on failure 1 on success
109	Command.ino://	T	K	:TK#			Track rate king	none
110	Command.ino://	T	L	:TL#		x	Track rate lunar	none
111	Command.ino://	T	n	:Tn#			Track refraction disable (OnStep only, replies 0/1)	Return: 0 on failure 1 on success
112	Command.ino://	T	o	:To#			OnTrack enable (OnStep only, replies 0/1)	
113	Command.ino://	T	Q	:TQ#		x	Track rate sidereal	none
114	Command.ino://	T	R	:TR#			Master sidereal clock reset (to calculated sidereal rate, stored in EEPROM)	none
115	Command.ino://	T	r	:Tr#			Track refraction enable (OnStep only, replies 0/1)	Return: 0 on failure 1 on success
116	Command.ino://	T	S	:TS#		x	Track rate solar	none
117	Command.ino://	U	#	:U#		x	Toggle between low/hi precision positions	none
118	Command.ino://	V	H	:VH#			Read RA PEC sense index (seconds)	dddd
119	Command.ino://	V	I	:VI#			Read RA PEC record index start (steps)	Returns: DDDDDD#
120	Command.ino://	V	R	:VR#			Readout current PEC Data at current index	returns sddd,ddd#
121	Command.ino://	V	R	:VRnnnn#			Readout PEC Data	returns sddd#
122	Command.ino://	V	r	:Vrnnnn#			Read out RA PEC ten byte frame in hex format starting at worm segment NNNN Rate Adjustment factor for worm segments. PecRate = Steps +/- for each 1 second segment, hex one to eight Leave a delay of about 10ms between calls	Returns: :x0x1x2x3x4x5x6x7x8 x9#
123	Command.ino://	V	S	:VS#			PEC Readout StepsPerSecondAxis1	Returns: DDD.DDDDD#
124	Command.ino://	V	W	:VW#			PEC Readout StepsPerWormRotationAxis1	Returns: DDDDDD#
125	Command.ino://	W	0	:W0#			Select Site 0	Nothing
126	Command.ino://	W	1	:W1#			Select Site 1	Nothing
127	Command.ino://	W	2	:W2#			Select Site 0	Nothing
128	Command.ino://	W	3	:W3#			Select Site 3	Nothing
129	Command.ino://	W	I	:WIDDDDD#			Write RA PEC index start (steps)	Return: 0 on failure 1 on success
130	Command.ino://	W	R	:WR-#			Move PEC Table back by one second	Return: 0 on failure 1 on success
131	Command.ino://	W	R	:WR+#			Move PEC Table ahead by one second	Return: 0 on failure 1 on success
132	Command.ino://	W	R	:WRnnnn,sddd#			Write PEC Data	Return: 0 on failure 1 on success