

GEMINI II Field guide: A summary of Losmandy videos and information from GEMINI URL Brad D Wallis

last revised 5/26/2016

CWD

Video shows how to put mount in CWD position

Use level to make DEC axis vertical

Use level to make saddle base horizontal

INITIAL SETUP

Video shows how to put in basic parameters for GEMINI to function

Start with Mount in **CWD** position

QUICKSTART

MOUNT

LONGITUDE **ENT** LATITUDE **ENT** TIME ZONE **ENT**

NEXT

DATE **ENT** TIME **ENT**

SET

NEXT

How to enter LAT/LON My LAT/LON is

-119d 00' 36" +34d 48' 38.52"

GEMINI wants -119:00:36 34:48:38

to get lat lon in DD:mm:ss DDD:mm:ss you can use

<http://www.latlong.net/>

MOUNT STARTUP MENU

QUICK START **set lat/lon time etc**

COLD START first time or when mount is moved or CAL is bad

WARM RESTART for situation in observatory where mount is stable

NIGHT OF VIEWING

Video shows how to start up GEMINI for a night of “viewing”

COLD START

MODELLING

pick star (press EAST or WEST until you get a star you want to use)

GOTO

center with HC

MODEL

ALIGN

BACK REPEAT FROM GOTO for more stars

or **GOTO** and **PICK OBJECT**

MODELING

Video shows how to build up GEMINI's model for accurate pointing

MENU

FUNCTIONS

MODELING

star in west

GOTO

center

MODEL

ALIGN →→ **IF YOU DO NOT HIT ALIGN ... THIS STAR WILL NOT BE ADDED TO THE MODEL *****

BACK

GOTO..... repeat

3 in WEST 1 in EAST minimum

NOTES on MODELING :

A model using 3-5 stars allows GEMINI to determine Polar Alignment errors

A Model using 5-9 stars allows analysis of mount non perpendicularity

A Model using 10+ stars on each side of the meridian allows instrumental flexure analysis

REFRACTION corrections are calculated for the model that has been built

Refraction correction can be turned off when using driver programs that take refraction into account

PARKING THE MOUNT

Video shows how to PARK / UNPARK the mount

GOTO

PARK

at CWD POSITION

and it turns itself off after PARK

for RESTART

TURN ON GEMINI

GOTO

PARK

UNPARK

TRACK FUNCTION

Video shows how to use the TRACK function for tracking comets/craters/ etc

MENU

TRACK

COMET/ USER DEFINED

center on object you want to track

TRAIN

wait up to 45 min

re-center

COMET

SET

SETTING SAFETY LIMITS

Video shows how to set safety limits / how to override preset safety limits

*** If you want to image objects as they go past the MERIDIAN by more than ~!hr

*** You are going to want to change the GEMINI's MERIDIAN LIMITS...

WARNING: When you override the preset MERIDIAN limits you need to pay attention to avoid running the scope into the pier

SLEW to PRESET SAFETY LIMIT

GEMINI will beep when you approach LIMIT

GEMINI will beep LOUDLY when you hit the LIMIT

Change to **CENTER** speed and move past the LIMIT

Then go to **MOVE** speed and move the mount to the new LIMIT that you want then

MENU

MOUNT

LIMIT

SET LIMIT HERE

*** SAFETY LIMITS can also be set by doing **MENU** → **MOUNT** → **LIMITS**

And then inputting the new desired SAFETY LIMITS for travel beyond the Meridian

ALIGN or SYNCHRONIZE

Video shows how to improve mount pointing model and how to make a correction to the model if the mount is bumped...

First, Improving pointing MODEL

MENU

ALIGN

BRIGHT STAR

select star

center

MENU

ALIGN

ALIGNMENT repeat

IF MOUNT IS BUMPED / DISTURBED

“push” mount to get star back near center

CENTER the star using the hand controller

MENU

ALIGN

SYNCHRONIZE

POLAR ALIGN CORRECTION

Video shows how to use the POLAR ALIGN ASSIST Function of the GEMINI

NOTE: PAA is said to get polar alignment to within about a degree of the pole
In statements on the GEMINI website. PAC or a Polar scope will get your alignment
much closer than a degree and drift alignment will provide even better alignment

MENU
FUNCTION
MODELLING
WEST
GOTO

Center star

MODEL
ALIGN
BACK
GOTO

Center Star

MODEL
ALIGN
BACK
GOTO

Center Star

MODEL
ALIGN
BACK
GOTO

Center Star

MODEL
PAC

Center star using AZ/EL

DONE

HC MENU SELECTION allows you to flip RA/DEC HC directions

TITAN AZ/EL ADJUSTMENT

TURNING EL KNOB CW LOWERS POLAR AXIS
TURNING AZ KNOB CW PUSHES THE MOUNT'S AZ

MOUNT BALANCE (from Gemini-2 web site)

**MENU
MOUNT
BALANCE**

Hand Controller will show X (RA) and Y (Dec)
Motor power use

See <http://www.gemini-2.com/hc-English/En-balance.php>
for full explanations

If Y LINES are long then mount is out of balance in DEC
If X LINES are long then mount is out of balance in RA

CONNECT TO GEMINI WEB SITE INTERFACE (from Gemini-2 web site)

FIRST GET GEMINI IP ADDRESS

**MENU
MOUNT
NETWORK**

⇒ **GEMINI UNIT'S IP ADDRESS**

Then in browser on PC http://IP_ADDRESS

Username is admin w/ no password

Barnard Objects ...

There is no Barnard Catalog in the various catalogues on the GEMINI 2
Here is a short listing of the LDN identifiers for a number of popular
Barnard Objects

Barnard 33	Horsehead Neb	LDN 1630	IC
434			
Barnard 68	super dark nebula below Snake	LDN 57	
Barnard 72	Snake Neb	LDN 66	
Barnard 75	frilly neb above snake neb	LDN 112	
Barnard 87	Parrot head Neb	LDN 1771	
Barnard 142	Aquila Dk Neb (part of E Nebula)	LDN 688	
Barnard 143	Aquila Dk Neb (part of E Nebula)	LDN 694	

RA/DEC of Barnard Objects J2000

Barnard 33	Horsehead Neb	IC434	
Barnard 68	super dark nebula below Snake	17:22:38	-
23:50:12			
Barnard 72	Snake Neb	17:23:50	-
23:41:51			
Barnard 75	frilly neb above snake neb	17:25:20	-
22:00:00			
Barnard 87	Parrot head Neb	18:04:10	-
32:32:25			
Barnard 142	Aquila Dk Neb (part of E Nebula)	19:39:41	
+10:31:00			
Barnard 143	Aquila Dk Neb (part of E Nebula)	19:41:25	
+11:00:00			

CONNECTING to GEMINI using ETHERNET cable with PC to add new or modified catalogues

Using an ethernet cable between Gemini and your computer :

1. establish a fixed IP to your computer (eg 192.168.0.1)
Control Panel / Network Connections / network connection properties / TCP IP
2. use your web browser by connecting to the address 192.168.0.111
3. in the new window : username = admin and validated without password
4. Gemini homepage appears
click on "SD Card" then "HCFirmware"
5. select the new catalog (click on Browse, select .guc file) and press Submit
6. on the hand controller, go to Menu, HC, and press Dowload
a scrollbar appears ... the new catalog is load

Now you can use it

CREATING A NEW CATALOG FOR THE GEMINI 2

New catalog data is entered into a text file in the format:
name , Right Ascension , DEclination , information (separator
comma is important)

The Right Ascension is in the form 00:00:00 (6 digits separated by ":") and Declination as +00:00:00 (sign (+ or -) 6 digits required separated by ":")
A maximum of 20 characters for the name and 50 for information (this can vary slightly depending on the characters used)

Save the file in text format and then rename the file with the extension ".GUC"