LA SILLA OBSERVATORY

Science and Operation

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SUSI2 SURVIVAL GUIDE

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1. INTRODUCTION

1.1 PURPOSE

This document is a quick guide for TIOS and Astronomers, to know how to use SUSI2 instrument, how to operate it and solve common problems.

1.2 SCOPE

This document covers the control part of the SUSI instrument as the OS, ICS, configuration and startup tools for instance.

1.3 APPLICABLE DOCUMENTS

The following documents, of the exact issue shown, form a part of this document to the extent specified herein. In the even of conflict between the documents referenced herein and the contents of this document, the contents of this document shall be considered a superseding requirement.


1.4 REFERENCE DOCUMENTS

The following documents are referenced in this document.


1.5 ABBREVIATIONS AND ACRONYMS

The following abbreviations and acronyms are used in this document:

- LSM: La Silla Management
- LSO: La Silla Observatory
- N/A: Not Applicable
- TBC: to Be Confirmed
- TBD: to Be Defined

1.6 STYLISTIC CONVENTIONS

This subsection is optional. Use it if it makes sense. The following is just an example. Change it according to your needs.

The following styles are used:

**Bold**

In the text, for commands, filenames, pre-suffixes as they have to be typed.
Italic
In the text, for parts that have to be substituted with the real content before typing.

Teletype
For examples.

<name>
in the examples, for parts that have to be substituted with the real content before typing.

Bold and *italic* are also used to highlight words.
2. OVERVIEW

The Super Seeing Imager SUSI2 is a direct imaging CCD camera mounted in the NTT Nasmyth A since 1998. It is optimized for periods of good seeing. SUSI2 are the latest version of the Superb Seeing Imager, same concept but 4 times larger field, (5.5 x 5.5) arcmin. Incorporates the first version of new ESO controller FIERA. Its shutter permits exposures down to 0.3 seconds and it was designed to operate on a rotating Nasmyth adaptor. SUSI2 works under LINUX environment.

2.1 SUSI CCD

The two EEV chips are identified as ESO CCD # 45 and 46. On the RTD, the default options show North at the top and West (chip # 45) to the left.

The CCDs have been found linear within ± 0.15% over the full range 0-60000 ADUs. Pixel saturation occurs at ~ 150000 e-.

2.1.1 CCD REFILL

Every day, at noon, the CCD has to be refill, vacuum and temperature hast to be checked in the pulpo. Side A of the telescope.

3. - HOW TO START SUSI2

3.1-login as susi
3.2 start log monitor from mouse menu
3.3 rlogin lemsu then type reboot
3.4 suinsStartSCCD all
3.5 scanei to check LCUS
3.6 check CCDs typing psg ccd
3.7 Start SUSI2 with the mouse menu > SUSI INS start > check TCS enable then start (fig 3.1).
3.8 Start Susi RTD from menu.
3.9 Start Midas from menu.
This is **SUSI startup** panel. Appears with the right mouse button, then click suinsStart. You can define here what subsystems are available. Pressing the button start the instrument is started. When it is completed the and OS panel appear and subsystems should be in state STANDBY.

![SUSI Startup Panel](image)

**FIG. 3.1**

4.- **OS PANEL**

4.1 **Starting Operation**

If global sate on the OS panel is Standby then > select from menu state **ONLINE**

4.2 **Shut-down**

1. From the Os panel on Control GUI select Instrument > SHUTDOWN

2. On xterm type `%suinsStop`
5.- OS Engineering GUI Panel

If there are problems with one specific sub-system, with this panel is possible to start it up.

6.- CHECK MIRR4 FOR SUSI

6.1- ICS ENGINEERING GUI PANEL

From mouse menu:
If you want to change from Susi2 to Sofi you must enable the mrr4 option in the panel and then set up.
If it's going to be use susi the mrr4 position will be Automatically point to the susi2 path position
7.- Filter Change Set Up

To change filters:

1.- go to the position you want the filter.
2.- move to load.
3.- select the filter.
4.- click on set filter
5.- click on Archive filter.

This panel doesn’t show the current one

8.- TROUBLESHOOTINGS

8.1 SUSI FIERA work around

If problems related with Fiera:

1.- on x-term type suinsStop – proc FIERA
2.- vccEnvStop – e $RTAPENV
3.- vccEnvStart – c $RTAPENV
4.- suinsStartSCCD.

8.2 Reboot Susi2 Fiera

1.- rlogin wemcs -l fcdn run
2.- wemcs root>cd /
3.- wemcs root /> reboot

Wait 3 min until Fiera Sparc LCU comes back. Check FIERA LCU and ccs environment is up.
8.3 CCD SPARK Reboot wemcs

The workaround consists in stop/start the CCS environment immediately after the reboot of the FIERA SPARC.

After the reboot, login to the SPARC as fcdrun:

1.- wemcs –l fcdrun
2.- >su – vltmgr, Check if susi2 enviroment is running :
3.- ccsPerfMon
4.- If the environment is not running :
   > vccEnvStart –e  $RTAPENV (wait 30 sec)
   > vccEnvStop –e  $RTAPENV (wait 30 sec)
   > vccEnvStart –e  $RTAPENV (wait 30 sec)
5.- If the environment is running:
   > vccEnvStart –e  $RTAPENV (wait 30 sec)
   > vccEnvStop –e  $RTAPENV (wait 30 sec)
6.- nttinsStartSCCDS susi

8.4 OFFSET BETWEEN SUSI FOCUS AND IA

After doing IA and the results of this one seems to be good but not the focus in the image, You should apply this formula:

\[ F_{\text{susi}} = 7.26 \quad F_{\text{new}} = F_{\text{susi}} - \frac{d}{1030} = 9.26 \]

Where d is the defocus in AO.

NOTES: Please add comments here.

8.5 Susi2WS LINUX reboot

One method

1.- Kill all processes and windows, then click the logout button, below the yellow lock icon in the lower bar.
2.- The login prompt appears, then reboot.

Second Method

1.- Alt+Control F2, goes to text window, then do Alt+Control+delete (like a PC).
2.- Then to return to grafic mode Alt+Control+F7.
8.6 Fitslist Failure

If fitslist fails doing rlogin wg5off etc. is due to protocol xhost+ fails. Then do:

xterminal susi > ssh wg5off –I astro
..................> pass (usual one),
now is connected, nd go on with the normal procedure
to open the fitslist, that is
  ➢ fitslist –who etc.