EUROPEAN SOUTHERN OBSERVATORY

La Silla Observatory

SCIENCE OPERATION DEPARTMENT

Re-Engineering Project:

SciOp Plan

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1.- INTRODUCTION

During the first half of 2002, a re-engineering effort took place at La Silla, aiming at the creation of the La Silla Science Operation Department, which groups the three formerly existing Telescope Teams, i.e. NTT, 360/CAT and Medium-size Telescopes.

During meetings attended by many members of the telescope teams, most aspects of the science operation were discussed. These discussions led to the production of various re-engineering documents that were circulated among the staff for review, resulting in new versions that were finally released. The collection of these documents constitute the SciOp Plan. As the structure of these documents reflect closely the re-engineering meeting structure, this document is provided as a "wrapper" in order to provide an overview of the SciOp Plan. It is constituted by "cut-and-pasted" sections of the various re-engineering documents. Obviously, in case of discrepancy, the original documents are over-riding this one. Also, this document reflects the re-engineering effort as of Jul.1, 2002. It is expected that the individual documents will eventually be updated.

2.- CLIENTS, SERVICES & PROCESSES

Section 2. from **SciOp Structure and General Operation Plan,** LSO-PLA-ESO-9000-1

2.1- SERVICES PROVIDED

SciOp provides astronomical data to its clients, as well as the information needed by the clients

- to obtain these data (e.g. instrument manuals, exposure time calculators, etc), and,
- to transform these astronomical data (i.e. measurements in adu as a function of the x,y position on a CCD) into astrophysical data (i.e. measurements in flux units (erg/s/m2/A/arcsec2) as a function of other physical quantities (wavelengths, RA, Dec, ...)).

p>SciOp does not provide the scientific idea for which the data are needed, and does not interpret astrophysically the data, although the astronomers belonging to SciOp do it for their own projects, and are therefore experts whose experience is of great value when assisting the clients.

The data produced by SciOp (including those produced by Visiting Astronomers) must be of the best achievable technical quality (e.g. instrument always in focus), and must be calibrated -or, more specifically calibratable, i.e. they must be accompanied by a set of auxiliary data that allows the astronomer to fully remove the instrumental signature of the instrument (flat field, standard stars, etc.). These auxiliary data are defined in the calibration plan of each instrument.

In more details, the scope of SciOp is:

·Preventive maintenance of instruments, telescope and auxiliary equipment
·Calibration Plan
·Telescope and Instruments Statistical Process Control (Performance)
·Help desk for VAs (for pre- and post- observing run questions).

·Assistance to P1PP/P2PP and during observations.
·Environment Monitoring (Weather safety)
·Reporting
·Telescopes & Instruments Configuration control (Optic, Mechanic, Software, Electronic, infrastructure ...)
·Provide full year coverage for all the above.

2.2- CLIENTS

The "clients" of SciOp are the members of the international astronomical community at large, and in priority the astronomers of the ESO member states.

More specifically, these includes:

- Visiting Astronomers (VAs, who will come to la Silla to perform their observations) and "Service Mode" Astronomers (SMAs), who don't come to la Silla, their observations being performed by SciOp staff, either in Service Mode (queue schedule) or as Delegated Observation Mode (on fixed dates).
- Potential astronomers: who may submit a project that would eventually get accepted, and who will then become VAs or SMAs.
- The Archive: the data produced by SciOp are archived in the ESO Science Archive (cf archive.eso.org) for use by future astronomers. The role of the archive is double: 1/ it constitutes a 100% reliable backup of the data, 2/ it constitutes a mine of data that can potentially be re-used for other purposes than those of the original project. It is therefore important that the data be calibrated (calibratable) and the instruments characterized.
- Projects and Technical Astronomers: SciOp hosts some projects (new instruments, prototypes, experiements...). Some of the SciOp astronomers can be deeply involved in these projects (e.g. as project scientist or project manager). Their schedule and support load is to be adjusted in order to accomodate these duties. Additionally, external astronomers attached to project (e.g. an instrument scientist from Garching or other institute) can be at La Silla for a fairly long time. These astronomers will be integrated as guest to SciOp, in order to improve communication, training, info, and to give them better support.
- Guest/Visitor instruments (such as SHARP, CIGALE...): SciOp is not responsible for these instruments. It will provide support only to the telescope-related aspects of the operation, i.e. Day + Night TIO, support astronomer for generic astronomical support (e.g. hints and tips on the telescope), but obviously no support for the instrument.

2.3- PROCESSES

From an "ISO-9001" point of view, the processes that belong to SciOp are the following:

- **a-Production of Scientific Data:** the input is the scientific question, the output is the corresponding observations replying to this question. SciOp will deal with all aspects of this process, i.e. to help prepare a technically sound proposal that will get time (assuming of course that it is a "good" question), prepare his observations so that they optimally reply to his question, help him performing the observations, or perform them ourselves (all flavors of Service Mode), and finally help him in the data reduction (**not** by reducing the data for him). Basically, all the technical aspect of his question are our job: with our help, he should find trivial to reply to his astronomical question.

- **b-Operation of the instruments and telescopes:** the input is the tons of hardware and software constituting the telescopes and instruments, the output is a scientific instrument, fully understood, certified and characterized. Obviously, this is an internal process (i.e we provide the input and use the output during the first process).

3- TECHNICAL STRUCTURE

From Section 3, **SciOp Structure and General Operation Plan,** LSO-PLA-ESO-9000-1

3.1- INTRODUCTION

The SciOp Department will be constituted of Astronomers, Telescope and Instrument Operators (TIOs) and Operation Engineers. The main differences with the current Team structure are the following:

- SciOp will operate the 3 telescopes, while each team was operating only one telescope. This gives us a large potential of flexibility that was not available with the individual teams. The way we use this potential should increase both the overall efficiency, AND the individual satisfaction (i.e. possibility to learn new things, to teach things, to remove the duplication of tasks that currently exists because of they are done independently in each team, leaving more time for more interesting tasks, etc.
- SciOp will not include Electronic Engineers nor Electronic Technicians, who will belong to the LED, where a "Telescope Support" sub-department will be formed to centralize direct support to the telescopes. At least for the first year, this sub-department will be constituted by some of the current Team Electronics, so that their expertise is not lost by dilution in the Engineering Dptm. One senior engineer from the current teams should be the head of that sub-department; he shall keep an overview of the system.

The main difference between La Silla SciOp and Paranal SciOp is that, in La Silla, SciOp "owns" the telescopes and instruments, on which the support teams and departments will perform work for us. In Paranal, the Engineering Dptm owns the telescope and instruments, and lend them to SciOp for the night. The main advantage of the La Silla scheme is that SciOp owns the complete processes (c.f. previous section). The expertize to perform first level of troubleshooting and basic preventive maintenance should be maintained within SciOp. In that framework, each task will either be performed internally (according to internal SciOp procedure), or externally (e.g. 3.6m top ring change will be handled by LED). In case it is performed by an external provider, SciOp will accept (or not) the job done. The main disadvantage of this scheme is that most of the maintenance work will be "outsourced" to LED; to work properly, it will require a very good coordination. This makes the role of the Telescope Coordinator crutial.

3.2- INSTRUMENT CORE

3.2.1- INSTRUMENT SCIENTIST

Each instrument (e.g. EMMI, WFI...) will have an INSTRUMENT SCIENTIST (astronomer) and an INSTRUMENT TIO. Together, the Instrument Scientist and Instrument TIO form the INSTRUMENT CORE that concentrates all the operation-related expertise on the instrument: if there is some info or knowledge related to the operation of an instrument, the Core should have it. Obviously, some of the specialized experience will stay with the corresponding expert (e.g. optical layout, cryogenics, electronics...).

The role of the instrument scientist will be very similar to that of the current instrument scientist, i.e. more specifically

- defining and implementing (possibly with the support of EngDpt, SWC...) observing modes
- defining and implementing the calibration plan,
- writing and maintaining the relevant documentation (user's manual, instrument web pages, etc).
- training other SciOp members on the use of the instrument (e.g. coaching other astronomers in view of them giving support to the clients, etc)
- track pending problems and action points related to the instrument (e.g. give a few phone calls to make sure that things keep moving)
- develop data processing recipes. Priority goes to recipes to aiming at a fairly automatic processing of calibration plan data to monitor the health of the instrument. Secondly, to process easilly observations on-line (e.g. standard wavelength calibration for all fixed modes (grisms), standard solution for echelle gratings, etc.)

It is important to note that the SciOp Operation Engineers will be deeply involved in most of these points. Also note that it is not expected that the instrument scientist will perform all the support on his instrument.

3.2.2- INSTRUMENT TIO

The instrument scientist will be assisted by a TIO, who will be have expert knowledge of that instrument, both for day and night operation. The role of the Instrument TIO can be summarized as following:

- assist the Instrument Scientist in testing observation modes,
- assist the Instrument Scientist to perform the calibration plan (e.g make sure that the frames needed are obtained, obtain more if needed).
- together with the Instrument Scientist, define the best way to operate the instrument at night
- coach other TIOs on how to operate the instrument in the best way,
- track pending problems and action points related to the instrument (e.g. give a few phone calls to make sure that things keep moving).
- together with the operation engineers, define and improve the operation procedures and check list related to that instrument (all TIOs should always try to optimize operation procedures and check-list -while respecting the strict conf.Ctrl-, but naturally, as they know "their" instrument better than anybody else, they will be most productive for that instrument).

It is important to note that the Instrument TIO does not have to work only on that instrument. The "Instrument TIO" job is more a background task that he can perform during his "background turno" (former Mid-Day/Mid-Night, cf below), during the night (long exposures), during the day (phone calls), etc... While it is desirable that he keeps accumulating experience on the instrument (e.g. operating it at night, performing set-up at day, etc), it is also important that he spends some "background" time on the instrument, e.g. when performing some tests while it is in the lab. In summary, the actions related to the "Instrument TIO" job have a time-scale of weeks/months (following up problems, testing new modes) and not day-by-day.

Also, only one TIO is "Instrument TIO" for a given instrument, not 2, in order not to dilute responsibility. Of course, the Instrument TIO can appoint one or various delegates, for instance in his contra-turno, or to tackle with a specific issue, but he will remain the one "officially" in charge.

To reach the level of full "Instrument TIO", it is likely that some additional training will be required by the operation engineer, electronics, optics, and/or whoever needed.

From the administrative point of view, the "Instrument TIO" title will appear in the Goals and Objective. The evaluation criteria will be (these are examples, not an exhaustive list): efficiency in following up problem reports (not in solving them, which is the task of the person/deptm to whom the problem is assigned), efficiency in performing the calibration plan, in coaching other TIOs, etc. For the first year, there will of course be some real-time adjustments to the G&O: the idea is definitely not to sack anybody on this new responsibility, but to get the best out of the system, and to get the system as good as possible.

3.3.3- TELESCOPE SCIENTIST/TIO

In a similar way, each telescope (NTT, 3.6, 2.2) will have a Telescope Scientist and Telescope TIO, forming a Telescope Core. The Telescope Core has the same role for the telescope and related systems as the Instrument Core for the instruments. For instance, pointing model, mirror model, active optics, followup of action points and problems related to domes, hydraulics, etc... are under the Telescope Scientist/TIO Core' responsibility.

3.3- INSTRUMENT FORCE

The various Instrument Nuclei are combined into "INSTRUMENT FORCES"; the various Instrument Forces that come into mind are:

- Imaging: WFI and SuSI
- Visible spectro imagers: EFOSC2 and EMMI
- IR: SofI and TIMMI2
- High-res spectro: CES/HARPS, FEROS, EMMI/Echelle
- Telescopes

These forces should exchange expertise at all levels: observation procedures, data reduction, hints and tips, etc. Also, the Instrument Scientist of one of the instrument will almost automatically be able to give basic support on the others of the same instrument force. This should foster communication between the current teams. One Core can belong to several Forces. Other forces could be considered, eg 2p2 (=2p2 +

WFI + FEROS), NTT (= NTT+EMMI+SUSI+SOFI), 3p6 (=3p6+ EFOSC+ TIMMI + CES/HARPS).

In addition to the Instrument Scientists of the instruments constituting it, the Force will also include additional scientists, i.e. "new" astronomers who are not yet Instrument Scientists, and "senior" scientists (this includes Fellows who completed their first year) who fully master all the instruments from one Force and are expanding to other Forces. In that framework, the support of a given instrument will be provided by the astronomers of its Force, not only by the Instrument Scientists. The average nr of nights during which each instrument is scheduled must be taken into account when constituting the forces and, to a certain extend, when hiring replacement for leaving scientists.

At this point, the 5 above-mentioned forces should meet briefly, but fairly formally (e.g. every 2 months), with the following agenda:

- important news,
- new important problems (i.e. that could be of interest for the other nuclei)
- follow-up of previous important problems
- new hints and tip.

Each of these meeting should be summarize briefly in a "monthly instrument force report", which will 1/ diffuse the info to SciOp as a whole, 2/ document and archive the problems, achievement, hints and tips..., 3/ provide input for the bimonthly SciOp report that the head of SciOp has to produce for the upper management (i.e. help me!).

In the future, the rhythm and scope of these meetings will be adjusted depending of the usefulness of the first ones.

It must be noted that the Instrument Core and Instrument Force structure is a technical structure, which obviously overlaps with the administrative structure (described in [2]) since the same people are involved. It is not a problem, since these structures have well defined scopes that are not overlaping. This is technically a "matrix" organization.

SciOp Technical Structure	LS-Imaging IFo	SuSI2 Core
		WFI Core
	LS-Spectro IFo	EMMI Core
		EFOSC-2 Core
	LS-HighRes IFo	CES Core
		HARPS Core
		FEROS Core
	LS-InfraRed IFo	TIMMI-2 Core
		ADONIS Core
		SofI Core
	LS-Telescopes TFo	NTT Core
		3.6m Core
		2.2m Core
		DIMM Core

4- MANAGEMENT STRUCTURE

From **SciOp Management and Administrative Structures**, LSO-PLA-ESO-90000-5/1.0

4.1- INTRODUCTION and PRELIMINARY DISCUSSION

The current teams have a flat structure under the Team Leader. It is not possible to keep a completely flat structure for the SciOp department. Indeed, as it will be composed of 44 people in Jul.2002 (24 people in "steady state" operation beyond 2004), it constitutes too large a group to be managed by one person. The SciOp Department has to be divided in sub-departments, or **Sections** of about 10 people each. These Sections are lead by a "**Section Leader**".

In the discussion that lead to this document, two main structures were considered.

- **Model 1:** SciOp be divided in
  - an Astronomer Section which is composed by all the astronomers of SciOp (Staffs, OpAs, Fellows...), lead by a senior
  - two TIO Sections, each of them lead by a senior TIO. The two sections are split along the natural division of the turnos.

  Pros: Equally distributed work load. Fairly well match the structure of PO SciOp, that is proven to work. This is also an advantage in the eventuality of a merging.

  Cons: there were some discussion about the need of a lead astronomer; it was finally decided that the Head of SciOp cannot manage all the astronomers, plus the other heads of sections.

- **Model 2:** the SciOp administrative division match the Instrument Forces described in [1]. The head of each Instrument Force would also be the administrative head of that group.

  Pros: administrative structure matches the technical structure (is it really a pro?)

  Cons: work distribution uneven. Schedule would be a nightmare if performed by the head of sections. Bad past experience: in the former "IR group" (which existed before the Teams), the re-cycling of IR staff attached to a decommissioned instrument proved difficult. Structure incompatible with Paranal.

The outcome of the discussion was that Model 1 will be implemented.

4.2- ADMINISTRATIVE ORGANIGRAM

Science Operation					
Head of SciOp					
Astronomers' Section	**TIOs' Section**		**Operation Engineers**		**MET** (till 2002-09-30)
Astronomer Section Leader	***Turno A***	***Turno B***	**OpEng** (also deputy to HoSciOp)	**OpEng** (also deputy to HoSciOp)	**MET Section Leader**
Astronomers	**TIO-A Section Leader**	**TIO-B Section Leader**	Documentation/Web Specialist	Data Handling Operator	1.52 ESO + 1.54 Dk Operation
	TIOs				WFI Operation

4.2.1 Introduction

This section describes the administrative structure of SciOp, taking into account the discussions outlined in the previous paragraph, and the actual staff as described in the SciOp Staffing Plan [3].

4.2.2 Head of SciOp

The job description of the Head of SciOp (HoSciOp) is given in "Team Leader and Head of Deptm: Job Descriptions" [2].

4.2.2.1 Deputies

HoSciOp will be assisted by two Deputies. These deputies will be the two Operation Engineers. As they work in contra-turno, HoSciOp and his deputies will ensure a complete time coverage.

The responsibilities delegated to the Deputies include:

- Change of schedule of all members of SciOp except themselves and HoSciOp,
- Leave requests for periods of less than 1 week
- Urgent PRs

4.2.2.2 Safety officer

SciOp will have a safety officer, who reports directly to the HoSciOp, and whose duties include the monitoring of safety, prevention of hazards and dangerous situation, and improvement of safety throughout all SciOp activities. He shall also be the main interface with the La Silla Safety officer, but does not report to him.

4.2.3 Operation Engineers

They report directly to HoSciOp. Their administrative duties are

- Deputies to the HoSciOp (cf above).
- Participate to recruitement boards for TIOs and OpEng
- Prepare a monthly report on their achievements, activities, concerns and projects, for the Head of SciOp.
- Supervize the Documentation/Web Specialist and Data Handling Operator.
- Manage general operation budget (633) and Telescope Project budget (644)

4.2.4- Astronomy Section

The Astronomy Section is composed by all the La Silla astronomers affiliated to the SciOp department (i.e. all LSO astronomers, except La Silla Director, Head of SciOp and SEST/APEX astronomers), including Staff, OpAs, Fellows.

This Section is leaded by the **Astronomy Section Leader**, who is appointed by Head of SciOp of a period of 1yr, renewable. The duties of the Astronomy Section Leader include:

- Distribute and follow-up the SciOp Goals and Objectives among the astronomers
- Performance Appraisal of the astronomers (yearly performance review, and provide input for the Personal Action Forms for contract renewal).
- Prepare the astronomer's schedule on a trimester bases.
- Approve trip changes for the astronomers (his own changes are approved by HoSciOp or

deputies).

- Participate to the SciOp recruitement processes:
    - Participate to the Fellow Selection Committee, and nominate another representative of SciOp among the Astronomers.
    - Participate to the Staff/OpA selection boards.
    - Participate to the TiO and OpEng selection boards.
- Prepare a monthly report on the achievement, activities, concerns and projects, for the Head of SciOp. The achievement section can contain metrix of the operation, but it must be noted that the instrument metrics (shutter efficiencies) are technical matter, which belong to the Leader of each Instrument Force, and not to the Head of Astro Section.

It must be noted that these are only administrative duties: this document deals with administrative structure. Technical and scientific issues are dealt with in the framework of the Instrument Forces [1]. The Astronomy Section Leader can be head of one of the Instrument Forces, but this is not linked to his appointment as Decurion.

4.2.5- Operation Section

The Operation Section is composed by all the La Silla TIOs affiliated to SciOp (i.e. all TIOs of La Silla except those affiliated to SEST/APEX and non-SciOp Telescope, if any).

This section is split in two sub-sections according to the turnos, in order to form two more or less equally sized groups. Each of the groups is lead by a senior TIO, appointed by HoSciOp for a period of 1yr, renewable. The duties of both TIO Section Leaders include:

- Distribute the SciOp Goals and Objectives among the TIOs of their group.
- Performance Appraisal of the of their group (yearly performance review, and provide input for the Personal Action Forms for contract renewal). In case a TIO changes turno during the year, the Leader of the turno in which he is at the end of the year will consult with the Leader of the other turno for the appraisal. The PAFs will be prepared by both Leaders.
- Prepare the TIOs' schedule on a trimester bases, including inter-Force/Telescope training, and change of turno if needed.
- Approve trip changes for the TIOs (their own changes are approved by HoSciOp or deputies).
- Participate to the SciOp recruitement processes:
    - Participate to the TIO Selection boards.
    - Participate to the OpEng selection boards.
- Prepare a monthly report on the TIOs' achievements, activities, concerns and projects, for the Head of SciOp.

4.2.6- MET Operation

From Jul.1, 2002 (start of SciOp) until Sep.30, 2002 (end of 2x1.5m telescope operations), the current MET will remain a separate entity within SciOp. The current staff, structure and operation of MET will be preserved (except the Electronics, who will be on the LED staff as of Jul.1) as one of the SciOp Sections. During this transition period, the MET Leader will report directly to HoSciOp.

However, in oder to start the implementation of SciOp within MET,

- some non-MET SciOp TIOs will already start getting trained at the 2.2m
- MET will start implementing SciOp reporting and operation system (i.e. daily meeting, monthly report, etc.)
- the astronomers and TIOs of MET will be integrated in the Instrument Forces.

5- BUDGET STRUCTURE

From **SciOp Management and Administrative Structures**, LSO-PLA-ESO-90000-5/1.0

5.1- CURRENT SITUATION

In 2002, the Telescope Teams used the following budget Work Packaged:

- 632 NTT Operations, LSO/LNT, O.Hainaut
- 633 3.6m Telescope Operations, LSO/CFT, M.Kuerster
- 634 Medium-Size Telescopes Operations, LSO/MET, R.Mendez
- 637 WFI Operations, LSO/MET, R.Mendez
- 642 NTT Maintenance, LSO/LNT, O.Hainaut
- 643 3.6m Telescope Maintenance, LSO/CFT, M.Kuerster
- 644 Medium-Size Telescopes Maintenance, LSO/MET, R.Mendez
- 694 NTT Upgrade, LSO/LNT, O.Hainaut

5.2- BUDGET STRUCTURE

The proposed Work Packages are the following. That structure was decided in order to follow closely the technical struture of SciOp.

- **632 SciOp Management**
    - WP Manager: HoSciOp
    - WP Approver: LSO Director
    - Purpose: travel, training, ...
- **633 SciOp Operation**
    - WP Manager: one of the OpEng
    - WP Approver: HoSciOp
    - Purpose: SciOp operation: computers, consumables, furnitures, small items...
- **634 Imaging IFo Projects**
    - WP Manager: Imaging IFo Leader
    - WP Approver: HoSciOp
    - Purpose: Projects and upgrades related to the instruments from the Imaging Instrument Force
- **637 Visible Spectro-Imagers IFo Projects**
    - WP Manager: Vis.Spectro-Imager IFo Leader
    - WP Approver: HoSciOp
    - Purpose: Projects and upgrades related to the instruments from the Vis. Spectro-Imager Instrument Force
- **642 IR IFo Project**
    - WP Manager: IR IFo Leader

- WP Approver: HoSciOp
    - Purpose: Projects and upgrades related to the instruments from the IR Instrument Force
- **643 High-Resolution Spectrographs IFo Projects**
    - WP Manager: High-Res Spectro IFo Leader
    - WP Approver: HoSciOp
    - Purpose: Projects and upgrades related to the instruments from the High-Res.Spectro. Instrument Force
- **644 Telescope Projects**
    - WP Manager: an Operation Engineer
    - WP Approver: HoSciOp
    - Purpose: Projects and upgrades related to the instruments from the Telescope Force
- **694 Telescope Maintenance**
    - This WP should be passed on to **LED**, as that department will be in charge of the maintenance of the Telescope. Items needed for daily maintenance performed by SciOp are included in SciOp Operation, WP 633.

6- SCIOP STAFFING PLAN

From **SciOp Staffing Plan,** LSO-PLA-ESO-9000-6/1.0

6.1- INTRODUCTION

The ESO Long Range Plan is the main constraint on the SciOp Staffing Plan. It dictates the following:

- The positions attached to the operation of the 1.5m telescopes disappear at the end of 2002.
- The positions attached to the operation of the 2.2m/WFI operation disappear at the end of 2003-Q4.

The LRP FTEs from the ESO budget are listed in Table 1, exactly as in the 2002 budget (i.e. some names are already obsolete).

The second constraint on the SciOp Staffing Plan is the optimization of available human resources, putting the emphasis on using the currently available resources to prepare the steady-state period.

Finally, Paranal will recruit 2 TIOs and 1 Astro for VST operation. SciOp will aim at training the TIOs to a level superior to the VLT requirements, i.e. impeccable night operation (VLT requirement), impeccable day operation, and excellent "background" skill, in such a way that SciOp TIOs would be by far superior to any external candidate.

Table 1: LRP according to the Budget

WP	PerID	Personnel Name	GRP-DIV	Post ID	Post	2002	2003	2004	2005	2006
Astronomers (50/50%)										
WP633 3p6op	MKU	Kuerster, M.	CFT-LSO	CSO402	Astro	0.5	0.5	0.5	0.5	0.5
WP633 3p6op	STM	Sterzik, M.	CFT-LSO	CSO401	Astro	0.5	0.5	0.5	0.5	0.5
WP634 METop	MER	Mendez, R.	MET-LSO	CSO502	Astro	0	0	0	0	0
WP637 WFIop	MER	Mendez, R.	MET-LSO	CSO502	Astro	0.5	0.5	0	0	0
WP642 NTTMaint	OHA	Hainaut, O.	LNT-LSO	CSO301	Astro	0.1	0.1	0.1	0.1	0.1
WP643 NTTop	LVA	Vanzi, L.	LNT-LSO	CSO302	Astro	0.5	0.5	0.5	0.5	0.5
WP643 NTTop	OHA	Hainaut, O.	LNT-LSO	CSO301	Astro	0.4	0.4	0.4	0.4	0.4
WP644 METMaint	MER	Mendez, R.	MET-LSO	CSO502	Astro	0	0	0	0	0
WP694 NTTupgr	oha	Hainaut, O.	LNT-LSO	CSO301	Astro	0	0	0	0	0
Total FTE Astro:						2.5	2.5	2	2	2
Total People Astro:		(Conversion: 0.5FTE/Person)				5	5	4	4	4
Fellows (50/50%)										
WP633 3p6op	BRK	Brooks, K.	SCV-ODG	FDG106	Fellow	0.5	0.5	0.5	0.5	0.5
WP633 3p6op	RAT	Athreya, R.	SCV-ODG	FDG101	Fellow	0.5	0.5	0.5	0.5	0.5
WP634 METop	ISA	Saviane, I.	SCV-ODG	FDG117	Fellow	0.5	0	0	0	0
WP637 WFIop	HJO	Jones, H.	SCV-ODG	FDG105	Fellow	0.5	0.5	0	0	0
WP637 WFIop	LGE	Germany, L.	SCV-ODG	FDG110	Fellow	0.5	0.5	0	0	0
WP643 NTTop	MBI	Billeres, M.	SCV-ODG	FDG103	Fellow	0.5	0.5	0.5	0.5	0.5
WP643 NTTop	MBI	NN to be hired	SCV-ODG	FDG10x	Fellow	0.5	0.5	0.5	0.5	0.5
Total FTE Fellows:						3.5	3	2	2	2
Total People Fellows:		(Conversion: 0.5FTE/Person)				7	6	4	4	4
OpAs (80%/20%)										
WP633 3p6op	NAG	LoCurto G.	CFT-LSO	PSO003	Astro	0.8	0.8	0.8	0.8	0.8
WP634 METop	JPR	Pritchard, J.	MET-LSO	PSO006	OpA	0.8	0	0	0	0
WP637 WFIop	JSE	Selman, F.	MET-LSO	PSO004	OpA	0.8	0.8	0	0	0
WP643 NTTop	PLE	Leisy, P.	CFT-LSO	PSO005	OpA	0.8	0.8	0.8	0.8	0.8
Total FTE OpAs:						3.2	2.4	1.6	1.6	1.6
Total People OpAs:		(Conversion: 0.8FTE/Person)				4	3	2	2	2
TIOs (100%)										
WP633 3p6op	EAR	Araya, E.	CFT-LSO	LSO404	TIO	1	1	1	1	1
WP633 3p6op	EWE	Wenderoth, E.	CFT-LSO	LSO414	TIO	1	1	1	1	1
WP633 3p6op	GOA	Gonzalez, A.	CFT-LSO	LSO405	TIO	1	1	1	1	1
WP633 3p6op	GRO	Roman, G.	CFT-LSO	LSO413	TIO	1	1	1	1	1
WP633 3p6op	MAE	Matamoros, E.	CFT-LSO	LSO407	TIO	1	1	1	1	1
WP633 3p6op	N.N.	Replacement	CFT-LSO	LSO412	TIO	1	1	1	1	1
WP634 METop	ATO	Torrejon, A.	MET-LSO	LSO508	TIO	1	0	0	0	0
WP634 METop	RVE	Vega, R.	MET-LSO	LSO513	TIO	1	0	0	0	0
WP637 WFIop	FLA	Labraña, F.	MET-LSO	LSO509	TIO	1	1	0	0	0
WP637 WFIop	RCA	Castillo, R.	MET-LSO	LSO507	TIO	1	1	0	0	0
WP637 WFIop	COJ	Cortes, J.	LNT-LSO	LSO511	TIO	1	1	0	0	0
WP637 WFIop	FSA	Sanchez, F.	MET-LSO	LSO510	TIO	1	1	0	0	0
WP637 WFIop	MMR	Martinez, M.	LNT-LSO	LSO512	TIO	1	1	0	0	0
WP637 WFIop	JAR	Araya, J.	MET-LSO	LSO506	TechEng	1	1	0	0	0
WP643 NTTop	ASA	Sanchez, A.	LNT-LSO	LSO314	TIO	1	1	1	1	1
WP643 NTTop	DCA	Castex, D	LNT-LSO	LSO310	TIO	1	1	1	1	1
WP643 NTTop	JMI	Miranda, J.	LNT-LSO	LSO308	TIO	1	1	1	1	1
WP643 NTTop	KAU	Aubel, K.	LNT-LSO	LSO309	TIO	1	1	1	1	1
WP643 NTTop	MAP	Pizarro, M.	LNT-LSO	LSO313	TIO	1	1	1	1	1
WP643 NTTop	MOC	Castillo, M.	LNT-LSO	LSO312	TIO	1	1	1	1	1
Total TIOs:						20	18	12	12	12
Operation Engineers (100%)										
WP633 3p6op	EBA	Barrios, E.	CFT-LSO	LSO406	OpEng	1	1	1	1	1
WP642 NTTMaint	PLS	Le Saux, P.	LNT-LSO	CSO303	OpEng	0.2	0.2	0.2	0.2	0.2
WP643 NTTop	PLS	Le Saux, P.	LNT-LSO	CSO303	OpEng.	0.8	0.8	0.8	0.8	0.8
Total OpEngineers:						2	2	2	2	2

6.2- OPERATION ENGINEERS

Two Operation Engineers are needed; their duties are described in the SciOp General Operation Plan [2].

6.3- ELECTRONICS

The 6 Electronics will not work on the SciOps staff, but will be integrated into other teams and departments. This section is therefore only for information, and is not formally part of the SciOp staffing plan. The current agreement with LED is that it will include a "Telescope Support" sub-department, lead by **R.Parra,** and including **J.Vilaza** on a long term (> 1yr) bases, and other Electronics technician to be trained and certified by the current Teams' Electronics. This training and certification process is critical in the concept of the ISO-9001 documentation and training, in order to ensure that their in-depth knowledge is not dispersed. In that framework, **J.Santana** will remain full time in LED/Telescope Support till October, and **J.Fluxa** ~50% in LED/Telesc.Support until October (the other ~50% in APEX) **R.Olivares** will move to APEX project, but he shall complete his job on the FEROS project. **H.Kastowsky** will retire in 2002.

6.4- ASTRONOMERS STAFFING PLAN

The steady-state staffing level required to operate the 3 telescopes is **4 staff astronomers, 3 OpAs and 3 Fellows**, implying the transfer of one of the Fellow FTEs to an OpA FTE (i.e., instead of 4 Fellows and 2 OpAs as planned in the original La Silla 2000+ long range plan).

This ensures that SciOp will operate with an average of **2.7 astronomers per night**, including training, which is considered to be the minimum to provide support to the 3 remaining telescopes, provided that the schedule recommendations outlined in the Astronomy Operation Plan [3] can be implemented (in summary, an increase of the mean length of the "Visiting Astronomer" observing runs to >3n, a more strict control of the programs that are accepted in Service Mode for the NTT and 3.6m, and, as often as possible mount instruments of the same instrument force simultaneously on the different telescopes). If these recommendations cannot be implemented, the staffing level will have to increase, or the services provided decreased.

For the transition period, the strategy is not to cut any contract and to reach the number of FTEs available by renewing only selected contracts. As of today, all the SciOp-to-be astronomers have fixed term contracts.

The table below summarizes the current contract situation, as well as the staffing plan.

- Colored boxes represent the extension of the existing contracts:
  - 2F is a fellow on a 2+1 yr contract (2yrs with 80n+35d duties, +1 yr in a Chilean institution OR 1yr with 40n+17d duties).
  - 3F is a fellow on a 3+1 yr contract (3yrs with 80n+35d duties, +1 yr in a European institution OR 1yr with 40n+17d duties). The contract extensions of M.Billeres, L.Germany and L.Schmidtobreick (from 2F to 3F, cf Memo from B.Leibundgut) are taken into account in this table.

- fl is a Fellow during his last year (3dr or 4th, depending upon whether he is a 2F or 3F). During that year, the FTE of the Fellow is not charged to SciOp budget, but to Science.
- O is an OpA, considering that their basic 1yr contract is to be renewed for a total of 3yr.
- A is an Astronomer, considering a 3yr contract.

* Boxes with a letter but no color background corresponds to the replacement of the person listed after the end of his contract.
* Empty box means that that position is closed.

The section "Actual Nr" counts the positions of each type, and "FTEs from LRP" is the LRP budget.

Table 2: Astronomer staffing plan, transition period and beyond

		2002 J	F	M	A	M	J	J	A	S	O	N	D
											MET operation terminated		
Lisa Germany	2p2F1	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F
Linda Schmidtobreick	2p2F2	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F
Repl. L.Schmdtbrck	2p2F2												
Yvo Saviane	2p2F3	2F	2F	2F	2F	2F	2F	2F	2F	2F	2F	2F	2F
Jon Willis	NTTF1						3F	3F	3F	3F	3F	3F	3F
Malvina Billeres	NTTF2	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F
George Hau	3p6F1	2F	2F	2F	2F	2F	2F	2F	2F	2F	2F	2F	2F
Kate Brooks	3p6F2	2F	2F	2F	2F	2F	2F	2F	Leaves to Calan				
Thomas Dall	3p6F2-b		Replaces Kbrooks					3F	3F	3F	3F	3F	3F
Gaspare Lo Curto	3p6O1	O	O	O	O	O	O	O	O	O	O	O	O
C.Foellmi	NTTO1				O	O	O	O	O	O	O	O	O
John Pritchard	2p2O1	O	O	O	O	O	O	O	O	O	O	O	O
Fernando Selman	2p2O2	O	O	O	O	O	O	O	O	O	O	O	O
Rene Mendez	2p2A1	A	A	A	A	A	A	A	A	A	A	A	A
Leonardo Vanzi	NTTA1	A	A	A	A	A	A	A	A	A	A	A	A
Olivier Hainaut	NTTA2	A	A	A	A	A	A	A	A	A	A	A	A
Michael Sterzik	3p6A1	A	A	A	A	A	A	A	A	A	A	A	A
M. Kurster/ E.Pompei	3p6A2	A	A	A			A	A	A	A	A	A	A
Actual Nr													
Fellows		6	6	6	6	6	7	8	7	7	7	7	7
OpAs		3	3	3	4	4	4	4	4	4	4	4	4
Astro		5	5	5	4	4	5	5	5	5	5	5	5
FTEs from LRP													
Fellows LRP		7	7	7	7	7	7	7	7	7	7	7	7
OpAs LRP		4	4	4	4	4	4	4	4	4	4	4	4
Astro LRP		5	5	5	5	5	5	5	5	5	5	5	5

		2003 J	F	M	A	M	J	J	A	S	O	N	D
Lisa Germany	2p2F1	3F	3F	3F	3F	3F	3F	3F	3F	fl	fl	fl	fl
Linda Schmidtobreick	2p2F2	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F
Repl. L.Schmdtbrck	2p2F2												
Yvo Saviane	2p2F3	2F	2F	2F	NOT replaced								
Jon Willis	NTTF1	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F
Malvina Billeres	NTTF2	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F
George Hau	3p6F1	2F	2F	2F	2F	2F	2F	NOT replaced					
Kate Brooks	3p6F2												
Thomas Dall	3p6F2-b	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F
Gaspare Lo Curto	3p6O1	O	O	O	O	O	O	O	O	O	O	O	O
C.Foellmi	NTTO1	O	O	O	O	O	O	O	Not extended				
John Pritchard	2p2O1	O	O	O	O	O	O	O	O	O	O	O	O
Fernando Selman	2p2O2	O	O	O	O	O	O	O	O	O	O	O	O
Rene Mendez	2p2A1	A	A	A	A	A	A	A	A	A	A	A	A
Leonardo Vanzi	NTTA1	A	A	A	A	A	A	A	A	A	A	A	A
Olivier Hainaut	NTTA2	A	A	A	A	A	A	A	A	A	A	A	A
Michael Sterzik	3p6A1	A	A	A	A	A	A	A	A	A	A	A	A
M. Kurster/ E.Pompei	3p6A2	A	A	A	A	A	A	A	A	A	A	A	A
Actual Nr													
Fellows		7	7	7	6	6	6	5	5	4	4	4	4
OpAs		4	4	4	4	4	4	4	3	3	3	3	3
Astro		5	5	5	5	5	5	5	5	5	5	5	5
FTEs from LRP													
Fellows LRP		6	6	6	6	6	6	6	6	6	6	6	6
OpAs LRP		3	3	3	3	3	3	3	3	3	3	3	3
Astro LRP		5	5	5	5	5	5	5	5	5	5	5	5

		2004 J	F	M	A	M	J	J	A	S	O	N	D
		WFI operation terminated											
Lisa Germany	2p2F1	fl	fl	fl	fl	fl	fl	fl	fl	NOT replaced			
Linda Schmidtobreick	2p2F2	3F	3F	3F	3F	3F	3F	3F	3F	fl	fl	fl	fl
Repl. L.Schmdtbrck	2p2F2									3F	3F	3F	3F
Yvo Saviane	2p2F3												
Jon Willis	NTTF1	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F
Malvina Billeres	NTTF2	fl	fl	fl	fl	fl	fl	fl	fl	fl	fl	fl	fl
George Hau	3p6F1												
Kate Brooks	3p6F2												
Thomas Dall	3p6F2-b	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F
Gaspare Lo Curto	3p6O1	O	O	O	O	O	O	O	O	O	O	O	O
C.Foellmi	NTTO1												
John Pritchard	2p2O1	o	o	o	o	o	o	o	o	o	o	o	o
Fernando Selman	2p2O2	o	o	o	o	o	o	o	o	o	o	o	o
Rene Mendez	2p2A1	Transfer to VST											
Leonardo Vanzi	NTTA1	A	A	A	A	A	A	A	A	A	A	A	A
Olivier Hainaut	NTTA2	A	A	A	A	A	A	A	A	A	A	A	A
Michael Sterzik	3p6A1	A	A	A	A	A	A	A	A	A	A	A	A
M. Kurster/ E.Pompei	3p6A2	A	A	A	A	A	A	A	A	A	A	A	A
Actual Nr													
Fellows		3	3	3	3	3	3	3	3	3	3	3	3
OpAs		3	3	3	3	3	3	3	3	3	3	3	3
Astro		4	4	4	4	4	4	4	4	4	4	4	4
FTEs from LRP													
Fellows LRP		4	4	4	4	4	4	4	4	4	4	4	4
OpAs LRP		2	2	2	2	2	2	2	2	2	2	2	2
Astro LRP		4	4	4	4	4	4	4	4	4	4	4	4

		2005 J	F	M	A	M	J	J	A	S	O	N	D
Lisa Germany	2p2F1												
Linda Schmidtobreick	2p2F2	fl	fl	fl	fl	fl	fl	fl	fl				
Repl. L.Schmdtbrck	2p2F2	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F
Yvo Saviane	2p2F3												
Jon Willis	NTTF1	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F
Malvina Billeres	NTTF2	NOT replaced											
George Hau	3p6F1												
Kate Brooks	3p6F2												
Thomas Dall	3p6F2-b	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F
Gaspare Lo Curto	3p6O1	O	O	O	O	O	O	O	O	O	O	O	O
C.Foellmi	NTTO1												
John Pritchard	2p2O1	o	o	o	o	o	o	o	o	o	o	o	o
Fernando Selman	2p2O2	o	o	o	o	o	o	o	o	o	o	o	o
Rene Mendez	2p2A1												
Leonardo Vanzi	NTTA1	A	A	A	A	A	A	A	A	A	A	A	A
Olivier Hainaut	NTTA2	A	A	A	A	A	A	A	A	A	A	A	A
Michael Sterzik	3p6A1	A	A	A	A	A	A	A	A	A	A	A	A
M. Kurster/ E.Pompei	3p6A2	A	A	A	A	A	A	A	A	A	A	A	A
Actual Nr													
Fellows		3	3	3	3	3	3	3	3	3	3	3	3
OpAs		3	3	3	3	3	3	3	3	3	3	3	3
Astro		4	4	4	4	4	4	4	4	4	4	4	4
FTEs from LRP													
Fellows LRP		4	4	4	4	4	4	4	4	4	4	4	4
OpAs LRP		2	2	2	2	2	2	2	2	2	2	2	2
Astro LRP		4	4	4	4	4	4	4	4	4	4	4	4

		2006 J	F	M	A	M	J	J	A	S	O	N	D
Lisa Germany	2p2F1												
Linda Schmidtobreick	2p2F2												
Repl. L.Schmdtbrck	2p2F2	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F
Yvo Saviane	2p2F3												
Jon Willis	NTTF1	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F
Malvina Billeres	NTTF2												
George Hau	3p6F1												
Kate Brooks	3p6F2												
Thomas Dall	3p6F2-b	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F	3F
Gaspare Lo Curto	3p6O1	O	O	O	O	O	O	O	O	O	O	O	O
C.Foellmi	NTTO1												
John Pritchard	2p2O1	o	o	o	o	o	o	o	o	o	o	o	o
Fernando Selman	2p2O2	o	o	o	o	o	o	o	o	o	o	o	o
Rene Mendez	2p2A1												
Leonardo Vanzi	NTTA1	A	A	A	A	A	A	A	A	A	A	A	A
Olivier Hainaut	NTTA2	A	A	A	A	A	A	A	A	A	A	A	A
Michael Sterzik	3p6A1	A	A	A	A	A	A	A	A	A	A	A	A
M. Kurster/ E.Pompei	3p6A2	A	A	A	A	A	A	A	A	A	A	A	A
Actual Nr													
Fellows		3	3	3	3	3	3	3	3	3	3	3	3
OpAs		3	3	3	3	3	3	3	3	3	3	3	3
Astro		4	4	4	4	4	4	4	4	4	4	4	4
FTEs from LRP													
Fellows LRP		4	4	4	4	4	4	4	4	4	4	4	4
OpAs LRP		2	2	2	2	2	2	2	2	2	2	2	2
Astro LRP		4	4	4	4	4	4	4	4	4	4	4	4

This plan is balanced (i.e. using the allocated number of FTEs) when considering complete years. For instance, in 2003, there is an excess of OpAs during the first half of the year, which is compensated by a deficit of Fellows during the 2d half.

6.5- TELESCOPE & INSTRUMENT OPERATORS

6.5.1- Steady State

The Long Range Plan considers **12 TIOs** for steady state SciOps. Considering that full coverage of a position corresponds to 2.4 FTE, this ensures 5 fully covered positions. Following the Operation Plan [2], these will be distributed among day, night and background operation. The actual distribution will depend on the daily operation needs, with **2 day TIOs, 2 night TIOs and 1 background TIO** being the typical distribution.

This implies that

- the maintenance is performed by LED,
- as many as possible of the operation and daily maintenance (monitoring) tasks are highly optimized and automated.
- the telescope scheduling constraints described in [3] --more specifically, fraction of service observing on the 3 telescopes and average run length > 3night (to minimize the set-up changes)-- can be implemented.
- telescope operation from the Common Control Center is fully implemented

6.5.2- Transition period

For the transition period:

- 2 positions are needed to operate the two 1.5m telescopes until Dec. 31, 2002.
- 15 positions are needed, i.e. 3 telescopes * [Day + Night] * 2.4 (full coverage factor) = 14.4,

Therefore, a total of 17 positions until Sep.30, 2002, and 15 till Dec.31, 2003 (end of WFI operation). These positions are strictly for telescope/instrument operation, so their number relies on

- the agreement with LED+APEX concerning the Electronics (cf Sect. 3.3),
- the documentation and web *restructuring* not being performed by TIOs (documentation and web *operation* can still be performed by TIOs, as described in the General Operation Plan [2])
- the data packaging (preparation of CDs for visiting astronomers) is not performed anymore by the TIOs.

6.6- RE-ENGINEERING POSITIONS

6.6.1- Introduction

In order to optimize human resources use during the transition period, the vacant TIO positions will not be filled with TIOs, as hiring and training a TIO for a period of 1.5yr would be a waste of resources. These positions will be used in the framework of restructuring as a Documentation and Web specialist, and a Data Handling Operator, in order to enable the optimal use of the TIOs as described in 3.5.2.

6.6.2- Documentation and web specialist

SciOp's documentation is largely complete, the majority of which in electronic form. However, each Telescope Team has developed its own standards for archiving, leaving no unique repository. All these standards have two points in common: they all require considerable manual handling of files from one machine to another and none have acceptable version control system. These points are addressed by the SciOp Documentation and Communication Plan [4], which describes a uniform standard to handle documentation based on the VLT Software Documentation System and the currently available Remedy Documentation Database. Creating that documentation repository will be a time consuming task, but, when completed, it will stand alone without further support.

Similarly, each Telescope Team's Web site contains an enormous amount of well organized information. However, the unification of the teams in SciOps will require a large amount of systematization and rationalization of the current pages to bring them into a common framework.

A Documentation and Web specialist will be hired for the restructuring of the SciOp documentation and web system. At the end of the transition period, this work will be fully completed, leaving SciOp with a uniform documentation and web system that will be maintainable during the Steady State period.

6.6.3- Data Handling Operator

The Telescope Teams currently prepare all the "Data Packages" for the visiting astronomers, and all programs in Service Mode (except WFI SM programs, which are dealt with by the Archive/Garching). For Visitor Mode programs, data packaging is done entirely by the TIOs, while for service mode, the data selection is performed by the staff astronomers, with the actual packaging (CD production) is performed by the TIOs.

Data packaging is a time consuming and critical task. At Paranal, the Data Flow Back-End (Archive) software has tools to prepare these data packages, with CDs and DVDs routinely distributed to the visitor. We propose to implement these tools at La Silla. ensuring an improved quality and reliability of data packages compared to the current situation.

We shall therefore hire a Data Handling Operator to prepare these Data Packages for visiting astronomers, thereby removing a large workload from the TIOs. In order to provide continuous data packaging services, the SciOp Data Handling Operator will work closely with the La Silla Archive specialists (Anton Schmerll and Saul Vidal), participating in the archiving of the data, while the Archive specialists will also participate in data package production. It is noted that the production of data packages for the NTT and 3.6m Service Observation will still be performed by SciOp, as an astronomer is needed to assemble and check the completeness of these packages.

Considering the rate of development of Archive tools over recent years, we expect that, by the end of the transition period, these will have progressed sufficiently so that data archiving and data package production for visitors can be dealt with by the Archive Specialists alone.

7- OPERATION PLAN

From **SciOp Structure and Operation Plan**, LSO-PLA-ESO-9000-1/1.1

7.1- NIGHT OPERATION

No major change with respect to the current system:

- A **Night TIO** is in charge of the night operation. He has FULL RESPONSIBILITY on the telescopes, its instruments, and its user. This includes:
    - Decision to close the telescope because of weather conditions (i.e. no formal need to call the

La Silla Coordinator)
  - Decision to re-open (i.e. no need to call the La Silla Coordinator)
  - Decision to call standby SciOp or Support Teams (LED, SWC...). Head of SciOp will approve overtime or whatever other administrative stuff related to emergency night call. .
  - decision to shut-down the telescope because of un-recoverable problem, etc

  Of course, the night TIO can always call whoever he things can help in his decision, or whoever he things can help make his decision enforced (i.e. if the Visiting Astronomer wants to get explanation on the humidity rules by an astronomer, get the Support Astronomer, Shift Leader (see below) or head of SciOp to come to help). In particular, for weather matters, an unexperienced Night TIO should call a more senior Night TIO.

- The **Support Astronomer** will assist the TIO and the Visiting Astronomer for all astronomical aspects of the observations. The Support Astronomer is supposed to give an extended introduction to the Visitor (i.e. hold his hand at least till the first successful science exposure is read out), and is supposed to be on "stand-by" (available in the control room, in his office, or anywhere else till ~2AM, then on call later for important questions/problems that should not wait till the next day). The Suppport Astronomer must be "certified" (cf SciOp Internal Training Plan) for the telescope and instrument he supports, meaning that he will be able to perform some troubleshooting (e.g. diagnoze and fix or work-around a crashed template).

After Dec.2003 (when SciOp will have lost the current 2p2/WFI staff), this scheme will have to be condensed, sharing TIOs and/or Support Astronomers among telescopes, e.g. no night TIO for the 2p2 when in FEROS mode, or no astronomer in WFI/Service Mode. Priorities will have to be defined in case a person has to attend 2 telescopes at the same time, eg. Visitor Mode has priority over service, and/or larger diameter over smaller one.

7.2- DAY OPERATION

7.2.1- TELESCOPE COORDINATOR

As maintenance will be mostly performed by "outsiders" (i.e. from Engineering Dpt and SWC), coordination will be of critical importance.

For each telescope, the **Day TIO** will be in charge of that coordination (and be TELESCOPE COORDINATOR). His role is equivalent to that of the Paranal's **UT Manager**. On a day-to-day basis, he will

- Coordinate with Eng.Dept and SWC the maintenance actions
- Coordinate with outsiders and insiders the various actions to be taken
- Accept (or not) the work performed on the telescope by other teams or internal teams
- Coordinate with the support astronomer/visiting astronomer the time of start-up and the time of the hand-over.
- Keep a log of the actions taken
- Finally, deliver the telescope in perfect condition to the Night TIO. (in summer time, the telescope can be handed over to the "Background TIO" who will receive it on behalf of the Night TIO arriving later).

- On Tuesdays, he will check the pending problems and action points, and call the responsible person (or have them called) for a status report
- On Wednesday, he will 1/ chair the weekly operation meeting during which the problems and action points are discussed 2/ issue the internal and external week reports.

One of the Telescope Coordinators (typically a "senior" one) will be SCIOP COORDINATOR, i.e. in addition to coordinate his telescope, he will also coordinate the actions that affect SciOp as a whole. He will be in charge of representing SciOp at the Action Point Meeting on Thu, and -if needed- invite additional SciOp members to be present at that meeting. He is also the person who mans the lasilla@eso.org account (cf [1])

7.2.2- SUPPORT ASTRONOMERS

Durning the day (starting at a decent time considering the time he went to bed the night before), the Support Astronomer will

- Get informed about the end of the previous night, if relevant
- Check that the day calibrations taken were successful and that all required calibrations were obtained.
- Give off-line (P2PP and Co) intro if required
- Background work

7.2.3- SHIFT LEADER

One of the support astronomer (most senior) is the Astronomer Shift Leader (which corresponds very closely to the former La Silla Coordinator). He is in charge of taking astronomy-related decision, as to schedule ToO requests (checking that they are approved/pre-approved), approve ToO Requests in case of emergency (eg WE if Director not available), etc. He is also in charge of formally "closing" ToO tickets in the Remedy system (cf [1]). The Shift Leader can also enforce the authority of the TIOs for weather and safety related matters (e.g. in case of recalcitrant Visitor).

It is suggested that the task of closing the Library curtains during the WE be passed to SWC, as they will become the most numerous users of the Admin building.

7.2.4- BACKGROUND TIO

The third TIO will either

- perform some background work (e.g on his instrument, on documention, etc), or
- be on training.

It should be noted that if the 3rd TIO is needed for on-line work, this has priority on any background task. For instance, if he is needed for urgent trouble shooting, problem solving, or to ensure the day/night transition, he should stop his background activities.

7.2.5- OPERATION ENGINEERS

They participate to maintenance plan, and on-line operation. Most of their time should be devoted to configuration control and operation developments, as described above

7.3. DAILY OPERATION SCHEDULE

- **08:00** Telescope coordinators get the reports of the night and assign the new problems/request to the relevant department. In case of urgent item, make sure that the corresponding people get the info and act. Adjust the operation plan of the day to cope with that emergency (note that this should be an exception).
- **08:00--12:00** Troubleshooting of previous night pending problems, Calibrations and set-up for night, maintenance Plan, in that order of priority. Note that in normal operation (i.e. not in technical time, there is no "installation/test of improvement" - this should go to technical time).
- **13:30--14:00 Dayly Coordination meeting**: Attendance compulsory for the 3 telecope coordinators, OpEng, a coordinator from Eng and a coordinator from SWC. Coordinators can also "invite" specific specialists (eg. instrumentation, mechanics) or other departments (ISG, Hotel...). Support astronomers are expected to attend unless they are on full night schedule. It must be noted that this is an open meeting, everybody is welcome. This meeting will also be the base for the Coordinators to prepare the weekly report on a day-by-day bases.
  - Brief report of the night, its problems and what is being done to solve them.
  - Brief report of actions under way
  - Coordination of the next 24h, esp.
    - actions to be taken in the afternoon
    - time of the startup for each telescope, and time of start of observations. Here should come a very brief summary of the observing program and of its technical implication.
    - scheduled maintenance actions for the next morning.
- **14:00--16:30:** Operation, complete what is left from the morning
- **Wednesday only: 14:00-15:00: Weekly coordination meeting.** All the pending problems are reviewed, as well as the action points. New action points are dicussed. At the end of that meeting, the Coordinators should enter the final comments in the Remedy system, and prepare the weekly reports, both the external one (generated by Remedy) to be sent to astro, and the internal one, which includes the summary of the week for the next turno. It is important to note that this coordination meeting must be prepared in advance: at the latest on Mon. or Tue., the Coordinators should contact the provider for each problems for feedback (unless that feedback appears in the problem report).
- **~16:30S**tartup (time to be adjusted depending on the season and the need). All maintenance actions stop.
- **~17:30S**tart of calibrations, then observations.
- **Just before twilight:** "hand over" from the day TIO to the night (or mid/day/night) TIO, with the Supp.Astro: pass the information of the day to the night people.

7.4- SUMMARY TABLE

The table below summarizes the operation and background tasks of the various members of SciOp

Functions	Operation Engineers	Day TIO	Night TIO	Background TIO	Astronomers (Faculty OpAs Fellow)	Head of Depa
TASKS	Deputy to Head of SciOp Operation Management Configuration Control Operational Tools Development (OPS) OTM/MTM templates maintenance Projects and Commissioning Maintenance Plan Control Technical Document WebMaster Training Day Coverage Night Technical Support	Day-to-Day Telescope Coordination and Configuration Control Weekly Report Instruments Setups Detector refilling Archiving Instruments Calibrations Performance Monitoring Troubleshooting Daily Startup Overlap Night Operation	Telescopes and Instruments Night operation and Safety Night Report Submitting Carryout Service Observing Make Users Happy Be the SciOp Face projection	Assist Instruments Scientist Perform Instrument Calibrations regarding the data Quality Control and Calibration Plan needs Installation and Setup Procedure definitions and Check List maintenance Instrument technical web page maintenance Commissioning of new features Instrument Metric and Configuration Control	Science Support Deputy Supporting visiting/service astronomers Service Observations (SM, ToO, DDT, etc.) Tel&Inst performance monitoring Instrument Scientist Create and maintain User's Manuals Develop Pipelines and Data quality controls Train Instrument TIO	Management and administrative ta: described in LSO-SPE-ESO-(

7.5-EMAIL

7.5.1- EMAIL LISTS & ALIASES

The following email lists are available as majordomo mailing lists (**TOBE IMPLEMENTED**)

- Instrument forces:
  - **ls-imaging@eso.org,**
  - **ls-infrared@eso.org,**
  - **ls-spectro@eso.org**,
  - **ls-hires@eso.org** and
  - **ls-telescopes@eso.org**
- Generic lists:
  - **ls-sciops@eso.org**: all SciOp staff, this is an alias joining the 3 following lists:
  - **ls-astro@eso.org**: all the astronomers
  - **ls-tios@eso.org**: all the TIOs
  - **ls-openg@eso.org**: all the op.Eng.

The leader of each group is in charge of the maintenance of these majordomo lists (i.e. adding new users, removing obsolete ones). Email to these lists will be distributed to

- all the members of the Force or group, for info or action,
- an email repository on kayu (or other TBD) (imaging@kayu.ls.eso.org, etc), see below.

7.5.2- EMAIL ACCOUNTS

The only allowed email browser is Netscape, as implemented on kila.

- **lasilla@eso.org:** front end to sci-ops, to be used as generic entry point and helpdesk. This will be made clear on the SciOp webpages. By default, any generic request should arrive at lasilla. During the day, La Silla is manned by the Top Telescope Coordinators (and during the night, by the TIO of the telescope on which the Top Telescope Coordinator works), who should

  - frequently check for new mails (several times per day)
  - forward every mail (possibly making the subject line more descriptive) to
    - one of the Instrument Forces, or
    - one of the Telescopes, or
    - head of SciOp for emails of "political" or managerial nature, or
    - another department (LED, SWC, management...) if that email was not meant for SciOps
    - with CC to lasilla@eso.org, and
  - delete the original message as soon as the CC of the forward has arrived back.

  This must trigger a reply with CC to lasilla@eso.org by someone in the Department. When a reply is received, both the original and the reply are deleted (ie that email is processed).

So, at any given time, the lasilla email should countain only

- *i)* just arrived emails
- *ii)* CC'ed emails from lasilla to the Department, awaiting a reply.

In the future, lasilla@eso.org could possibly evolve into a more automatic helpdesk (remedy?).

Special case: DDT proposals. Currently, all DDT proposal (Urgent ToOs and not urgent DDT, for La Silla and Paranal) arrive at on lasilla@eso.org. At the time of SciOp implementation, these will be filtered and stored in a DDT subfolder for reference. Changes are being requested on the DDT procedure, so that the emails sent include the urgent/not urgent nature of the proposal, and the telescope(s) requested, so that proper filtering can be implemented.

- **ls-ntt@eso.org, ls-360@eso.org ls-220@eso.org** (which should be connected to the current team addresses for continuity). Telescope specific. This is the email of the telescope coordinator. He should either deal with it (e.g. urgent information about something happening at the telescope), or forward to one of the Instrument Forces. As soon as a mail is dealt with (or forwarded), it is deleted, so that these account should be always almost empty. The home directory of these accounts should **(and will)** be kept empty: they are used only for email. As the lasilla account is manned by one of the TIOs, emails received on lasilla should be forwarded on the corresponding telescope account only if it is of interest for the other TIO of that telescope.

- **ls-imaging, ls-infrared, ls-spectro, ls-hires, ls-telescopes, ls-ntt, ls-360, ls-220, lasilla @kayu.ls.eso.org:** email repositories. They just store the mails received on the ls-imaging@eso.org, etc, mailing lists for long term history (say, 1year). (**TOBE IMPLEMENTED**)

7.5.3- EMAIL POLICY

- Incoming emails
  - in all the SciOp accounts (lasilla, ntt, 360, 220), mail should be read exclusively using **Netscape**, as implemented on kila.
  - lasilla, nttt, 360 and 220 (i.e. the day-to-day operation account) should be kept **"empty",** i.e. contain only the "active" messages. A message is deleted as soon as is processed (i.e. dealt with, or forwarded to one of the forces).
  - incoming email of "political" nature will be forwarded to and dealt with by Head of SciOp.
- Outgoing emails:
  - reply to emails that was forwarded by lasilla, or CC'd to lasilla must be CC'd to lasilla so that the original message can be deleted on lasilla.
  - inside sciOps: all sciop-related email must be CCd to at least one of the account SciOp accounts (lasilla, Telescopes or Instrument Forces) above. Use common sense to select which, e.g. urgent stuff related to instrument problem should be sent to the corresponding telescope and to the corresponding instrument force. SciOp emails that are not of general interest must be CC'd to the head of the corresponding Force, or to the head of SciOp in case of administrative or political emails.

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