## OPERATIONS PREPARATION

- Real-time ops. 24/7, Observers present
- Elliptic 90 hr, N-orbit. Long (78 hr) observations
- ➤ 3-axis stabilisation
- > Planned 2 year lifetime, ca. 3 y achieved(L at 1min.)
- > Co-location of SOC and MOC at ESOC
- ➤ Dedicated Control Room
- Maximum re-use of check-out h/w and s/w
- Complete data archive with ESA, post-ops period
- ➤ On-Board Computer (OBC)
- > (Hadamard transform module)

COPS AO 1 - 4



**OBSERVER** 



Mission Planning

IAU Telegrams
Exosat Express
Calendar

GS Vilspa



TM/TC Proc



ESOC MSSS S/C Ops.



RT Ops.



Displays RT Analysis



AA/IA





**USER** 

Community



Data Storage

















### OPERATIONS(1)

➤ Launch: 26/05/83

➤ Check-out: 14/06/83

> CALn/PV: 17/08/83

> AO 1-4: April 86

- N.B. Post. 4/86, extension possible using hydrazine to boost perigee.
- > Statistics

- No. of Observations ca. 2000
- Targets of Opportunity 150
- Co-ordinated Obs. ?

Dynamics

- Real-time changes (Observer)
- New and modified OBC modes
- TOO's ( Demanding on Mission planning)
- Anomalies



## OPERATIONS(2)

## Development

- Response to changes
- Provision of Auto Analysis and Interactive Analysis
- 24/7 Obs. Ops. Observatory controllers replaced scientists
- Computer system HP to Vax (post-ops)

### ➤ USER Interface

- COPS via PS
- Ops.Preparation
- Observers often present
- Use of IA
- Reporting



Dies irae dies illa Solvet EXOSAT in favilla Teste David rum Sybilla

Quantus tremor est futurus Quando observator est venturus Interactivam discussurus

Bleeper mirum spargens sonum In regione terminalium Coget B.Sci. ante Obscon

Quid sum miser tunc dicturus Triplicem FOT filaturus Vis ESPEC executurus

Dies irae dies illa Solvent OP in favilla Nunc bibenda est camomilla



### STAFFING

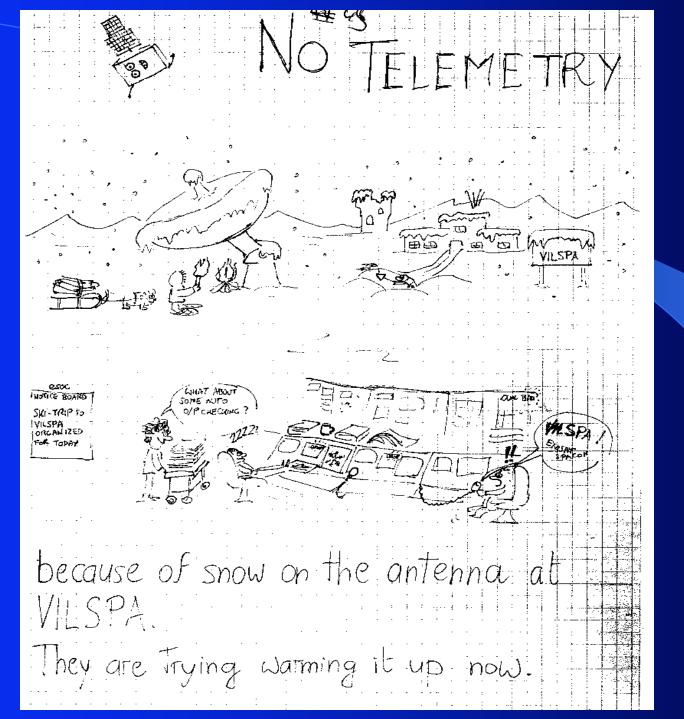
- Operations Preparation Engineers
  - S/W (ground,on-board,mission planning)
  - Establish DCR, MOC
- Recruitment resident scientists
  - RT Ops./ assistance observers(24/7)
  - Calibration/Performance
  - Data Analysis/research
  - Analysis software (AA/IA)
- Data assistants
  - FOT production/MPS/IA Booking/Despatch
- Observatory Controllers
  - RT Ops.



# **Typical Day**

- R/T Ops, support to Observers
- Feedback to on-going observation
- Mission Planning
- > FOT production
- > Archiving
- Development (OBC, AA,IA)
- > Science
- Documentation/reportring
- Response to TOO's, anomalies etc.
- > Special events
- Retire to ESOC Bar





# **FUN/CAREER**

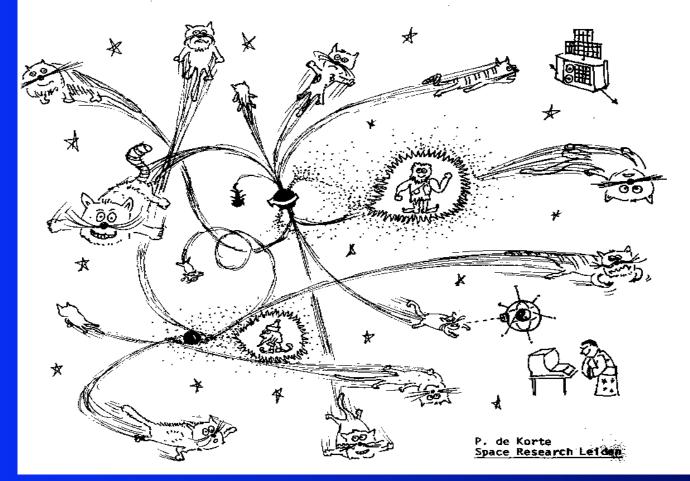
- > EXOSAT as excellent stepping stone for future career
- > ESOC H/Depts.
- > Fun
- Bar at ESOC
- Rhein Cruise
- Fun Run
- Ski Trips
- Cartoons

## Not the **EXOSAT EXPRESS**

COMMENTS ON THE COSPAR X-RAY ASTRONOMY MEETING

#### Iron Cats?

In the field of binary X-ray sources, the Temma results of Feline emission from pulsars and low mass systems are crucial for further model development. Also noteworthy is the detection of absorption lines in the spectra of burst sources presently explained as gravitationally redshifted Iron-absorption lines.





# **FUN/CAREER**

> EXOSAT as excellent stepping stone for future career

> ESOC H/Depts.

- > Fun
- Bar at ESOC
- Rhein Cruise
- Fun Run
- Ski Trips
- Cartoons
- Gocce Imperialis

