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THE JCMT NEWSLETTER

September 1999 Issue Number 13

Downloadable files containing the majority of the contents will shortly be available:

in Postscript format (news13.ps) or in Adobe Acrobat format (news13.pdf).

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The People Page

The following members of staff have left the JAC since the previous Newsletter was issued. We would like to extend our thanks and appreciation for all their hard work on behalf of the JAC, and wish them every success in the future.

Roxana Myers

Richard Prestage

Jim Pomeroy

Chase Reed

The following new members of staff have joined the JAC.

Elese Archibald - Postdoctoral Research Fellow

Brad Gom - Instrument Technician

Velvet Gonsales-Nases - Administative

Russell Kackley - Software Engineer

Peter Oshiro - Electronics Technician

Robin Phillips -

Dean Shutt - Chief Engineer

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 PATT Application Deadline

Deadlines for receipt of all JCMT applications for semester 00A is:

30th September 1999

Please read the next article - Electronic Submission Update before filling in your application forms for the forth-coming semester. In particular Canada requests electronic applications only, no paper submissions.

To ensure prompt processing, please ensure that your applications are sent to the correct establishment. Applications for JCMT time should be submitted to the national TAG of the Principal Investigator (PI) or, if the PI is not from one of the 3 partners, to the national TAG of the first named co- investigator on the application who is from one of the partners. International applications (those with no applicants from one of the partners) should be submitted to the PATT Secretariat at PPARC, Swindon. Members of the JAC staff in Hawaii count as International unless they are the PI on an application, when it should be forwarded to the appropriate national TAG.

Country paying salary of Principal Investigator

Canada	Netherlands	UK or International
Director-General's Office,	Dr. J. M. van der Hulst,	PATT Secretariat,
National Research Council of Canada,	Kapteyn Astronomical Institute,	PPARC,
5071 West Saanich Road, Victoria, BC,	Postbus 800,	Polaris House,
CANADA V8X 4M6	NL-9700 AV Groningen,	Swindon, SN2 1ET,
	NETHERLANDS	UNITED KINGDOM

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 Electronic Submission Update

Canadian and Netherlands Applications

CN - Please refer to local information about submission and formats.

NL - Please refer to local information about submission and formats.

UK and International Applications

1 - to obtain the most recent JCMT application template, send e-mail to "jcmtprop@jach.hawaii.edu" with the phrase 'request templates' in the Subject. Any text following the header information will be ignored. All necessary files will be e-mailed back to you.

PLEASE ENSURE YOU OBTAIN A NEW TEMPLATE FOR THIS SEMESTER. Submission of an older version may result in delay, or even rejection, of your application.

2 - complete the Latex template as instructed in the header section.

3 - You are required to submit a Postscript version of your complete application. Please append the Postscript to the end of the Latex making a single file for transmission. Please DO NOT use e-mail attachments.

4 - e-mail the completed Latex+Postscript file back to 'jcmtprop'. In the 'Subject' line you must specify 'New Application UK' or 'New Application Int'. Please read the header section of the template for details on which heading to use.

5 - each submission will be automatically numbered and acknowledged. It will be processed as soon as possible and you will only be contacted if difficulties are encountered with the printing or format. The most common problems arise with embedded Postscript figures.

6 - if you submit a revised version of the same application please follow the guidelines (in the header of the template) for completing the 'Subject' line.

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PATT ITAC Report for Semester 00AB

1. Introduction

This document details the allocations for telescope time made by the ITAC for the semester 00A (1 February 2000 - 31 July 2000).

2. Allocations

The individual partner TAGs hold meetings in their respective countries prior to the PATT session to assess applications deemed by the JCMT Board rule to be from their own country. At these meetings informal numbers of shifts are nominated for each application in a priority order. The Chairpersons of each TAG bring their respective lists to the PATT where the ITAC combine the awards, include discussion of the engineering and commissioning requirements, and assess the International applications. The final allocations of shifts are made by the ITAC.

Applications considered	
UK status#	74
Canadian status#	35
Netherlands status	22
International status	19
University of Hawaii	10
TOTAL:	160

10 UK starred applications & 1 Canadian carry-overs have been included in this total.

The PATT meeting was held at PPARC, Swindon on 6 & 7 December 1999.

It should be noted that if the PI on an application is a JCMT staff member based in Hilo, then the application is assessed by the national TAG where appropriate. However, by Board rule, International status is given to any application where the only named collaborator from any partner country is a JCMT staff member. International applications are assessed by the ITAC members at their meeting.

Time Available (in 16-hour nights)	

No. of nights in semester 00A	182.0
Engineering & Commissioning	33.0
University of Hawaii (10%)	14.5
Director's discretionary use	4.0
Available for PATT science:	130.5

The above table indicates the order in which nights are removed from the total available for the semester. The table below indicates the allocations using the JCMT Board formula for attributing applications to countries.

Awards (in 16-hour nights)	
UK status	68.0
Canadian status	31.0
Netherlands status	25.0
International status	6.5
University of Hawaii	14.5
TOTAL allocation:	145.0

3. Designated Service and/or Fallback time

Allocations for this semester are:

CDN = 4.0 shifts allocated for Canserv;

NL = no free allocation remaining;

UK = up to 27 shifts in the Ukflex fallback program;

INT = 0,25 shifts allocated for Intflex.

4. Non-standard Instrumentation

SPIFI (South Pole Imaging Fabry-Perot Interferometer), the visiting instrument from the Cornell group, is scheduled for installation in mid-May with several astronomical runs flexibly arranged over the following two weeks. SPIFI will be located on the right-hand Nasmyth (opposite SCUBA).

The Max Planck Institut fur Radioastronomie (Bonn) intend to bring their 800 GHz heterodyne instrument

out for observations during the semester. It is likely that this will be scheduled around mid-April.

5. Instrument allocation statistics

Instrument distribution	
A-band (& polarimeter)	8%
B-band	9%
C-band	7%
D-band	3%
MPI (800 GHz)	2%
SPIFI	6%
SCUBA polarimeter	7%
SCUBA	58

6. Applications with Long-Term Status

M/99A/C19(B.Matthews) was extended for a further allocation of 2 shifts in 00A to continue polarisation studies of molecular cloud cores and young stellar objects. This application has Canadian student thesis project status and continues to be re-allocated until observations are completed.

M/99A/U01(Holland) was given a further 4 shifts to continue the dusty disk observations. In addition, 2.5 shifts were carried over, as starred, from their 99B allocation. **M/99A/U42(Richer)**, mapping of the star formation in the Perseus molecular cloud, was given a further 6 shifts. In addition, 1 shift was carried over, as starred, from their 99B allocation. **M/99A/U45(Rowan-Robinson)**, the UK 8mJy SCUBA/ISO survey, was given a further 8 shifts in 00A with a final 8 shifts for semester 00B conditional on source identifications. In addition, 8 shifts were carried over, as starred, from their 99B allocation. **M/99B/U43(Thommes)** was given a further 4 shifts in semester 00A to complete observations to investigate the role of dust in extremely red galaxies. **M/99B/U68(Holland)** was given a further 4 shifts in semester 00A to study the Vega phenomenon around nearby stars. In addition, 2 shift were carried over, as starred, from their 99B allocation. All of the above extensions are subject to satisfactory progress reports to the relevant TAGs from earlier observations.

7. Engineering & Commissioning

A two-week period of heavy engineering (no observing possible) has been scheduled for March to replace the carousel drive motors and their associated electrical systems, drive cubicles, and electronic systems. A contingency period of one week has been set aside for extended work. If not required for carousel repair, this contingency time will be used for other urgent engineering or commissioning work, or returned for PATT use as appropriate.

Two shifts were kept for further TCS/OCS testing and the remaining 12 shifts were included in the allocation

tables for semester 99B.

Some shifts have been set aside for further commissioning of the heterodyne instruments.

RxA3 was scheduled for a new tuner-less mixer which may be available for installation this semester. However, a faulty liquid helium transfer in December has resulted in a vacuum leak in the cryostat and, as a result, RxA3 is unavailable for an undefined period of time until repairs can be effected.

RxB3 was also scheduled for a mixer upgrade to the tuner-less variety which has now been completed (in January).

Poor weather continues to plague the commissioning of the high-frequency instrument RxW and further shifts are required for that purpose.

Both the SPIFI and the MPI (800 GHz) instruments require setup shifts to enable installation, alignment, and system checks to be performed. SPIFI is located on the Nasmyth platform opposite from SCUBA. The MPI instrument goes into a receiver bay in the Cassegrain cabin.

The MPI group was again offered 4 engineering shifts plus 2 DDT shifts to install and commission their single mixer 800 GHz system (E-band) and have accepted the offer. They have been scheduled a flexible block of observing time in mid-April.

In addition there is commissioning time scheduled for SCUBA.

The two shifts from the previous semester, critical for complete 450 micron commissioning of the SCUBA polarimeter, were lost due to poor weather, but time has been scheduled to complete this work in semester 00A.

8. Fallback Programmes

A number of applications have been approved by the ITAC to be included in the schedule should the weather not be appropriate for the primary observations on any night. All applicants (allocated and fallback) have been requested to submit a completed template by the end of the first month of the semester, February 29, so their observations can be included on the queue system. Failure to submit a working template by February 29 may result in the ITAC removing the allocation of time. Applicants will be reminded in mid-February. Templates can be updated at any time, but it is necessary to have a working draft in the system.

9. The Flex Systems

There remains an outstanding 22.5 shifts of starred applications from semester 99B carried over into this semester. In addition, **M/99B/U17(Crutcher)** was given a 2 shift allocation deferred to 00A due to lack of RxA3 in semester 99B. The UK TAG again set aside a total of 24 shifts designated as UKflex. The intention is that each high-frequency allocation be extended by typically 20% using UKflex time, thus increasing the chance of obtaining suitable weather to complete the high-frequency program. Under weather conditions unsuitable for the high-frequency observing, the current observers would undertake observations from the UKflex list in a serviced mode and in the scientific priority ordering given by the UK TAG. Successful applicants on the UKflex fallback list have been informed that they have to submit complete templates for their observations but that there is no guarantee that any part of their program will be done during the semester.

A flexible system is now in operation for all partner communities, and for UH. Wherever possible the International projects are included flexibly with other partner projects. This appears to work extremely effectively with all allocated projects being placed in scientifically prioritised queues and flexed against all other projects in those queues.

10. Weather Bands

Each allocation has been placed into a select weather band, defined by a range of values of the CSO tau meter (water vapour content). It is imperative that observers make their observations within their prescribed weather bands and turn to other queued projects once the weather changes. Note that it is possible for the weather to improve out of a prescribed weather band as well as deteriorate.

From the start of semester 99B, due to staff pressures at the JAC, support staff no longer conduct serviced observing except for some very short (usually single shift) projects. The fallback queues will therefore continue to be handled by the TSS group and by visiting observers. It is now even more imperative that applicants make travel arrangements to provide observing cover for their scheduled shifts.

11. Other Business

11.1 Guaranteed time for instrument builders: The ITAC approved of the JCMT Board strategy on this topic, in that (a) time should be linked to the complexity of the project with different awards depending on whether the instrument was defined as small, medium, or large. A backend would count as an instrument. Other instruments, such as RxH3, would be treated on a case by case basis; (b) the science programme would be open to any of the investigators involved with the instrument. A scientific case would be adjudicated by the ITAC and must come from a subset of the original science case for the instrument (where appropriate).

11.2 Large programmes: Significant allocations of time resulting from the section above would be split over not less than two consecutive semesters so as not to monopolise most, or all, of the high-frequency weather during any given semester.

11.3 Release of data from the archive: With effect from the beginning of semester 00A, **ALL** JCMT data will become publically available one year after the final observations are taken. Any request for an exception to this rule must be given as a written case by the Principal Investigator and submitted to the Director, JCMT. Applicants will be reminded approximately one month prior to the end of the semester that their data will be released.

11.4 Rules for service observing?

12. Electronic Submission

The were only minor improvements to the current scheme which did not affect applicants, but smoothed the collection system at the JAC. All applications were received electronically using the software systems at either Groningen, Victoria, or the JAC. All postscript applications were collated and a top copy printed at the JAC within 3-4 days of the PATT deadline. No major problems were observed. Minor problems persist with the formatting and printing of the various types of postscript files, but these can always be worked around.

The UH applications do not conform to the electronic system and continue to be collected at the UH and posted to the JAC as hardcopy.

13. Procedures for Semester 00B

The deadline for semester 00B (1 August 2000 through 31 January 2001) applications is 31 March 2000 for ALL applicants. This deadline encompasses applications for all available facility instrumentation on the JCMT (RxA3, RxB3, the heterodyne polarimeter, RxW, SCUBA, and the SCUBA imaging polarimeter) and the visiting instruments SPIFI and the MPI (800 GHz) receiver.

14. Composition of ITAC

It should be noted that there have been significant changes to the membership of ITAC for this round. The two UK representatives, Dr. Jim Dunlop and Dr. John Richer, have been rotated off the committee and replaced by Dr. Jonathan Rawlings (Chairman) and Dr. Rob Ivison. The Canadian representative, Dr. Mike Fich, has been succeeded by Dr. Henry Matthews. Dr. Thijs van der Hulst remains as the Netherlands representative. A belated thanks to the retiring members for their sterlings efforts over recent semesters.

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Lethbridge Fourier Transform Spectrometer

It is likely that the Lethbridge FTS will be available for use during semester 00A. Further information is available at:

http://home.uleth.ca/phy/naylor/FTS.html

The Lethbridge group welcomes scientific collaborations with other JCMT users. Please contact Prof. D.A. Naylor (naylor@uleth.ca) to arrange collaborative efforts.

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South Pole Imaging Fabry-Perot Interferometer (SPIFI)

SPIFI is a direct detection, imaging Fabry-Perot interferometer designed for use in the submillimeter band (200 to 650 microns), especially the 350 and 450 micron windows available to the JCMT. SPIFI's detector is a 5 x 5 element monolithic silicon bolometer array cooled to 60 mK in an adiabatic demagnetization refrigerator. SPIFI uses free standing metal mesh Fabry-Perot interferometers to deliver spectroscopic images at velocity resolutions up to 30 km/s over the entire array. The velocity resolution is continuously adjustable from 300 to 30 km/s in a few minutes time at the telescope. Higher velocity resolutions (better than 15 km/s) are possible for the inner 9 pixels. The Winston cones coupling radiation to SPIFI's bolometers have 6.1" (~ lambda/D at 450 microns) circular entrance apertures and are arranged on a 7.0' square grid, so that SPIFI images a 35" x 35" field of view at the diffraction limit of the JCMT telescope.

At present, SPIFI has 9 pixels operating, we plan to have the additional 16 pixels installed in September 1998. SPIFI has demonstrated background limited sensitivities in the lab that are equivalent to single side band receiver temperatures of ~ 400 K (5 pixels) and < 800 K (4 pixels) at 370 microns. This receiver temperature is not a function of the velocity resolution employed, and is only a soft function of the line wavelength from 300 to 500 microns. We estimate the best attainable receiver temperatures are ~ 100 K (SSB), and are working towards this goal with reasonable hope of success. At present, SPIFI can tune to any frequency in the 350 micron window, and continuously scan 13 spectral resolution elements at any given wavelength. It is also possible to set up in the 450 micron window. In the near future, we expect to be able to easily switch between the two windows while the instrument is cold. Important astrophysical lines in the 350 micron window include the 371 micron [CI] fine structure line, and the rotational transitions of CO (7-6) (372 micron), HCN (10-9 & 9-8) (338 & 376 microns), and HCO+(10-9 & 9-8) (336 & 374 microns).

Tau(225 GHz) (nepers)	Tau(809 GHz) (nepers)	Tsys (K)	TA*(rms) (K)
0.045	0.70	2060	0.013
0.030	0.40	1500	0.010
0.060	1.00	2800	0.018

Estimated 809 GHZ sensitivities of SPIFI per pixel on the JCMT in 1 hour of integration time, scanning 6 spectral resolution elements. For these estimates we have assumed the receptive efficiency of the telescope eta(tel) is 65%.

These sensitivities are calculated based on current lab measurements at a resolving power of 6000 (50 km/s).

To scale to other resolving powers, notice that since Tsys is independent of the resolving power, TA* is proportional to R^1/2. For example, at a resolving power of 2,000 (150 km/s) TA* will be sqrt(2000/6000) = 0.58 times smaller (better) than the values in the table.

Note that our sensitivity is not yet optimized. On JCMT it is possible to reach sensitivities 2 or 3 times better than those above, and we are working towards this goal. Current best estimates will be posted on our Web page at the Cornell Astronomy Department Site:

http://astrosun.tn.cornell.edu/research/projects/spifi.html

SPIFI was developed at Cornell University under a NASA grant and is a collaborative venture between individuals at Cornell, Boston University and the SETI institute. It is our hope to achieve first light with SPIFI on the JCMT in early 1999, and our intent to make SPIFI available on loan to the JCMT for the foreseeable future. Our group welcomes scientific collaborations with other JCMT users. Please contact Prof. G. J. Stacey at Cornell University stacey@astrosun.tn.cornell.edu to arrange collaborative efforts.

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 Max-Planck-Institut 800 GHz Instrument

RxE is a single-channel quasi-optical SIS receiver for operation in the 350 micron atmospheric window (E-band). Among the most important lines available in this window are the transitions of CO J=7-6 [807 GHz], [CI] 3P2-3P1 [809 GHz], HCO+ J=9-8 [802 GHz], and HCN J=9-8 [797 GHz].

The receiver has been designed and constructed at the MPIfR in Bonn. The SIS mixer employs a Nb-(Al-oxide)-Nb junction produced in collaboration with IRAM in 1994. The LO system consists of an InP Gunn-oscillator followed by a doubler and a tripler stage which covers the frequency range 795 - 880 GHz. The cooled IF section consists of a 3 stage 2.5 - 4 GHz HEMT amplifier.

The receiver was successfully tested in the winters 1997/1998 at the 10m HHT on Mt. Graham. A DSB receiver noise temperature of 680 K was measured at 809 GHz. Continuum scans across Mars yielded a FWHP main beam width of 9" which is well matched to the diffraction limit. No evidence for side lobes or broad pedestal structure was found at a level of 10 - 13 dB.

The heterodyne response was demonstrated using the CO J=7-6 transition measured toward IRC+10216. The resulting spectrum is shown on the web page. The integration time was 180 sec, the data was taken under poor and unstable atmospheric conditions.

The system is currently being upgraded in Bonn and is scheduled for installation and commissioning at the JCMT in October/November 1999. After successful commissioning the instrument will be on loan from Prof. Rolf Gusten and his group at MPIfR and available for use by the JCMT community on a collaborative basis.

Further details can be found at:

http://www.mpifr-bonn.mpg.de/div/mm/tech/rxe.html

Observers interested in using it should contact Dr. Ronald Stark (stark@mpifr-bonn.mpg.de) to arrange collaborative efforts.

The double sideband (DSB) receiver temperature over the E-band is expected to be in the range 700 - 800 K. Only DSB operation will be possible. The maximum available bandwidth for the DAS is currently 920 MHz. The single-sideband system temperatures are expected to be around 10,000 K or less under good submillimetre weather conditions (weather band 1 = CSO(tau) < 0.05). Observers are advised to use these numbers to estimate required observing times.

The performance at the JCMT will only be known after the commissioning, but before the TAGS meet. Therefore, the actual numbers can be retro-fitted in the proposals prior to the final allocation meeting at ITAC in early December.

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Short Baseline Interferometry

The current round of SBI experiments has now been concluded. There are not likely to be any further JCMT-CSO SBI sessions. Further interferometry developments await the arrival and commmissioning of an SMA antenna on Mauna Kea.

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Weather and Fault Statistics for Semester 98B

The following tables present the weather loss and fault loss for semester 98B. A more detailed description of how these tables are created is also available here.

Month	Avail Hrs	Extend Hrs	Primary Loss	%	Backup Loss	%
August	496.0	20.6	43.7	8.8	3.7	0.7
September	472.0	9.6	16.5	3.5	16.5	3.5
October	480.0	13.0	165.3	34.4	40.3	8.4
November	481.0	18.3	194.6	40.5	147.1	30.6
December	480.0	19.9	194.9	40.6	97.9	20.4
January	488.0	28.6	209.1	42.8	161.1	33.0
Total	**2897.0**	**110.0**	**824.1**	**28.4**	**466.6**	**16.1**

Table 1: *JCMT weather statistics.*

Month	Avail	Total	ANT	INS	COMP	SOFT	CAR	OTH
August	496.0	21.9	1.0	10.8	5.7	4.2	0.0	0.3
September	472.0	23.5	2.2	13.9	0.6	5.5	1.3	0.0
October	480.0	21.9	4.9	7.9	0.3	0.4	4.6	3.8
November	481.0	10.8	1.5	6.3	0.0	0.9	0.9	1.3
December	480.0	10.4	0.3	5.9	0.8	0.8	0.5	2.0
January	488.0	29.6	8.0	2.9	16.0	2.8	0.0	0.0
P(hrs)	**2897.0**	**118.1**	17.9	47.7	23.4	14.6	7.3	7.4
B(hrs)		10.9	0.5	1.7	1.7	2.9	3.8	0.5

Table 2: *JCMT fault statistics. Wherever possible the faults are categorised into ANT = antenna; INS = instrument; COMP = computer hardware; SOFT = software; CAR = carousel; with the remainder going to OTH = other. The figures in the table may not appear to add up correctly due to rounding in the original program. P defines the time lost from Primary projects. The category B(hrs) is the time lost to Backup projects.*

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Weather and Fault Statistics for Semester 99A

The following tables present the weather loss and fault loss for semester 99A. A more detailed description of how these tables are created is also available here.

Month	Available	Extended	---- Lost to weather ----			
			Primary	%	Backup	%
February	438.5	29.6	104.4	23.8	80.4	18.3
March	464.0	18.0	134.9	28.6	52.9	11.2
April	464.0	15.3	107.4	23.2	47.9	10.3
May	344.0	5.8	120.0	34.9	57.0	16.6
June	464.0	23.8	46.5	10.0	4.0	0.9
July	472.0	34.6	28.8	6.1	12.3	2.6
Totals	**2646.5**	**127.1**	**542.0**	**20.5**	**254.5**	**9.6**

Table 1: *JCMT weather statistics.*

Month	Available	Lost	ANT	INS	COM	SOF	CAR	OTH
February	438.5	38.9	3.9	23.7	6.9	0.0	3.4	1.1
March	464.0	24.7	1.3	10.7	7.5	2.3	1.0	2.0
April	464.0	18.4	0.7	7.8	2.3	1.9	0.4	5.5
May	344.0	18.5	0.0	15.6	0.5	0.4	0.0	2.0
June	464.0	177.8	22.0	8.6	1.5	0.6	143.7	1.5
July	472.0	42.1	8.5	16.9	0.6	0.1	8.0	8.0
P(hrs)	**2646.5**	**320.4**	36.4	83.3	19.3	5.3	156.5	20.1
B(hrs)		37.7	4.9	11.3	0.8	0.2	20.0	0.5

Table 2: *JCMT fault statistics. Wherever possible the faults are categorised into ANT = antenna; INS = instrument; COMP = computer hardware; SOFT = software; CAR = carousel; with the remainder going to OTH = other. The figures in the table may not appear to add up correctly due to rounding in the original program. P defines the time lost from Primary projects. The category B(hrs) is the time lost to Backup projects.*

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Derivation of Statistical Information

This note provides some explanation on the method of production of the weather and fault statistical summary for the performance of the JCMT. There is very little manual intervention in the generation of these tables, other than to correct obvious errors, mis-labelled categories, or to complete missing entries (where they ca n be found from other sources).

o The data are extracted from the reports completed by the telescope operators at the end of their shift, one report for each shift (evening or morning); the shifts are normally of 8 hours duration. Because the change-over of TOs does not occur on the shift boundaries, the shift information is handed over to the followi ng operator who will file the report at the end of shift.

o A completely separate fault reporting system is used by the TOs and other staff to record time lost to faults (including problems which have zero-time lost). This system is used by the staff to identify, trouble-shoot and solve the faults. Each fault s hould then have an appropriate solve report attached for future reference. This system is not used for generating statistics.

o Input from the TO reports comprises

- - the actual time scheduled (normally 8 hours);
- - any extension of this (normally due to good weather and lack of pressing daywork);
- - loss of time on primary and backup programs due to the weather.;

  (**NB** : in flexible observing mode, the move from a high-frequency primary program to a low-frequency primary program because of a deterioration of the weather conditions does not result in any entry in the 'loss to the primary program' category.
- - loss of time to primary and backup programs due to faults, divided into 6 categories : ANTenna, CARousel, INStruments, COMputer, SOFtware, and OTHer. These categorizations are performed by the TO at the time of filing and persist in the analysis, although suggested changes in categories are suggested by the notes to the analysis.

  (**NB** : faults are defined as being in respect of subsystems that have been commissioned are therefore expected to work flawlessly. If the instrument under commissioning has a fault, this is not recorded in the log.

  (**NB** : previous correlations between faults as reported in these TO reports and via the separate fault reporting system show high levels of completeness. A similar correlation is also found between the TO reports and any completed Observer Reports for the period.
- - automated retrieval of weather conditions for the shift in question. These are not analysed further and are not further correlated with the reported conditions.

o Electronic submission of each report automatically triggers the summary analysis program (AUTO_STATS) for the month and semester to date, and the statistics reported to the JCMT Board and in the Annual Report are essentially these results.

o The analysis performed by AUTO_STATS may be repeated following identification and correction of spurious entries, or significant errors in categorization.

o Occasionally reports are not filed on time, and missing reports can seldom be reconstructed.

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JAC Internal Science Seminars

All visiting astronomers are encouraged to give scientific presentations to the JAC staff after their observing run. In addition, many of the JAC staff give presentation on their current research topics.

The seminars are organised by Gerald Moriarty-Schieven.

A list of those given to date this year and arranged for the future can be viewed here

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Distribution:

Information about new issues of the JCMT Newsletter is circulated to the community via the electronic distribution list held at the JAC, and also via the Canadian listserver. Anybody wishing to be placed on this mailing list should signup on the appropriate Web page.

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(please note the subtle difference in the two numbers above!!)

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On-line Documentation:

All up-to-date information on the JCMT and instrumentation is maintained through links from the JCMT homepage at URL:

http://www.jach.hawaii.edu/JCMT/home.html

Service Observing:

Applications should be sent by e-mail to the following:

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Canada                    jcmtserv@hia.nrc.ca

Netherlands               vdhulst@astro.rug.nl

UK (& International)  jcmtprop@jach.hawaii.edu
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NEXT ISSUE DEADLINE

The absolute deadline for submission of science and/or technical articles for the next issue of this Newsletter is **31st January 2000**. All communications regarding this Newsletter should be sent via email to **gdw@jach.hawaii.edu**.

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*The JCMT Newsletter is the official publication of the James Clerk Maxwell Telescope. These issues are **ONLY** available on the World Wide Web. **There is no paper magazine that corresponds to these pages, although downloadable files are available in various formats.** This is taken to be a sign of the times, where most, if not all, of the readership has access to an internet terminal. It means that the information presented can be made more up-to-date. Notice that several of the articles now refer directly to other links on the Web both internal to JCMT and on the odd occasion to external sites. It also means that the rapidly dwindling cash supply available for printing booklets can be channeled into other worthy causes.*

Contributions are solicited from recent observers, instrument builders and from the staff at the Joint Astronomy Centre.

Articles for The JCMT Newsletter may be submitted to the Editor at any time. Please take note of deadlines for specific issues. Even an electronic magazine takes a finite amount of time to format appropriately. If you wish to make any comments on the articles, please contact the authors. If you have any comments concerning the Newsletter itself, format and/or content, then please contact the Editor.

*The JCMT Newsletter is **NOT** a refereed journal but remains as the voice of the JCMT User community. It is appropriate that the content clearly reflect the state of the observatory, the availability of the instrumentation, and the quality of scientific output obtained. The former two features can be completed by the JCMT staff whilst the latter is primarily up to the user (and reader). Please contribute to your newsletter.*

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Thank you for taking the time to read this Newsletter.

Graeme Watt,

Editor

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