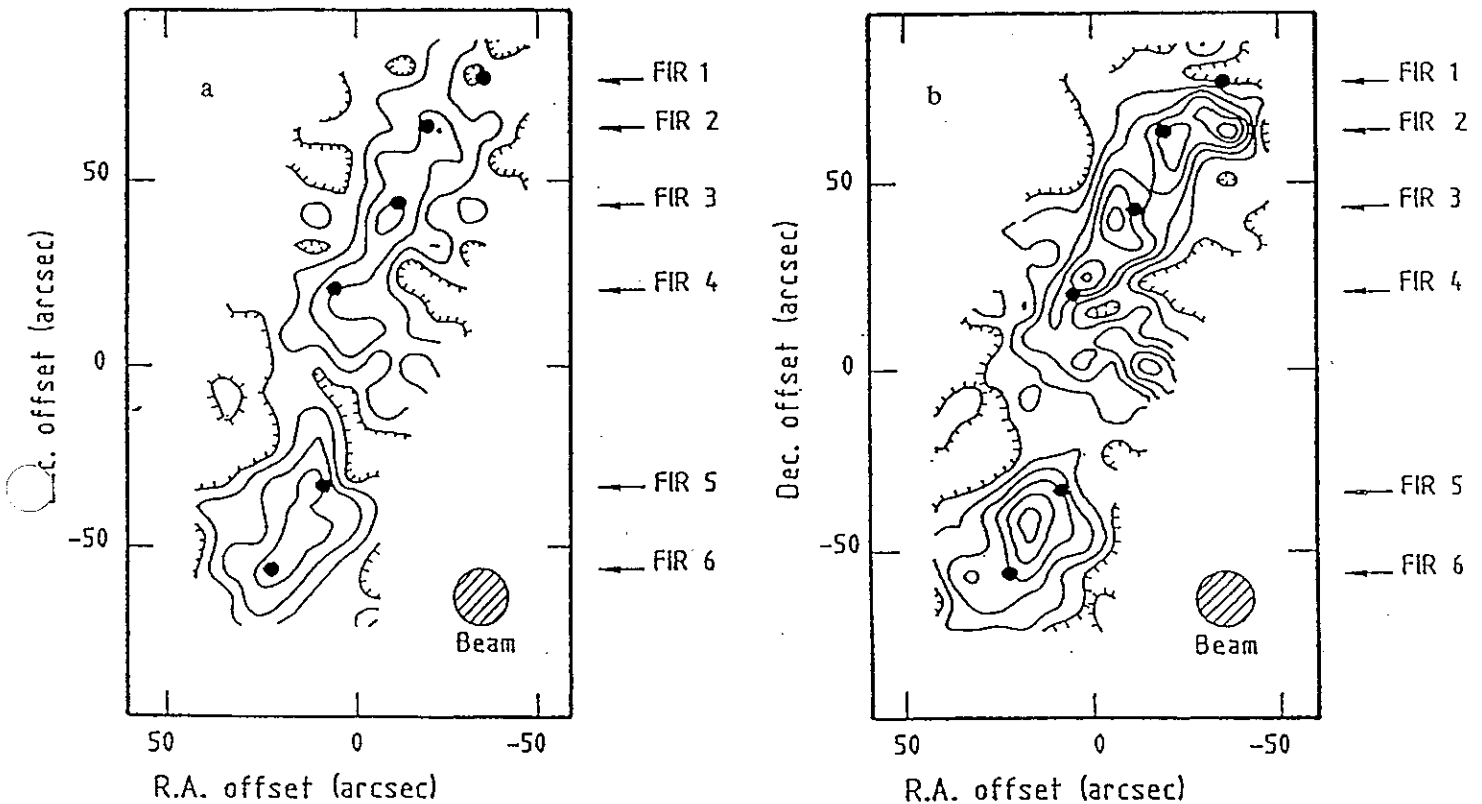


The first published paper using data from scheduled JCMT observations illustrates the use of emission from certain molecules as probes of dense gas. The above spectra of HCO^+ in the $J = 3-2$ transition show emission from the direction of the young stellar object GL490 and from a position 10 arcsecs away from it. The narrow line common to both spectra is due to emission from the core of the molecular cloud in which GL490 is embedded. In (a) the line has low intensity wings believed to be due to outflowing gas. For full details see Mitchell, G.F. et al., 1988, *Astron.Astrophys.* 201, L16. (Figure courtesy of Professor Mitchell.)

Other results from the JCMT



(a) Integrated CS(J=7-6) emission ($\int T_A^*(V)dV$) in NGC 2244. Contours are drawn at 5, 10, 15 and 20 $K.kms^{-1}$. The 1σ noise level is around 0.3 $K.kms^{-1}$. The offset centre is $5^h39^m12^s.2-1^{\circ}56'30''$ (1950). (b) Contours of peak T_A^* at intervals of 1K from 3K. The mean 1σ noise level is slightly over 1K. (Moore et al., *Mon.Not.Roy.astr.Soc.*, in press).

Each of the six filled circles in the above diagrams indicates the position within a molecular cloud in NGC 2244 where a star is forming. By using the JCMT to map the region in the J=7-6 line of CS Moore et al. have detected heated gas at five of the six positions. They consider it likely that the heating is due to self-luminous sources and, by implication, that the sources have evolved beyond the true protostar stage. (Figure courtesy of Dr T.J.T. Moore.)

JCMT INSTRUMENTATION PROGRAMME - LATEST DEVELOPMENTS

In Autumn 1988, a questionnaire was sent out to a large number of users and potential users of the telescope. Basically the idea was to discover what types of observations people would like to be making during the next few years on JCMT. The replies were predictably mixed. The interests of respondents ranged from solar system studies to QSOs and the microwave background - at least 28 orders of magnitude in energy. Both continuum and spectral line observations featured about equally. It was widely recognised that the site on Mauna Kea allowed the JCMT to operate at wavelengths shorter than most other mm/submm telescopes, and that the accuracy of the dish surface suggested that this should be the main thrust of the telescope.

Undoubtedly the majority opinion, therefore, was for moving upwards in frequency, equipping each band first with single element receivers, then arrays.

Respondents were asked to rate a list of possible projects on a strawman proposal. By far the highest scoring instrument was a 320-380 GHz SIS receiver; next highest was an array for this band.

The JCMT development fund provides for new instrumentation on the telescope, and an outline 5-year plan has been produced, based on the responses to the questionnaire and the financial constraints of this fund. This was accepted at the December Board meeting, and the first directed Announcements of Opportunity are being sent out in March 1989. These AOs will include funds for the construction of common-user receivers in one or more of the four well-found laboratories. Money is also available for research and development leading to future instruments; proposals for this work can be sought from any institution within the member countries.

W. Dent
ROE

NEWS FOR THE DUTCH COMMUNITY

Various documents describing the JCMT, its instruments and their current status are available in the JCMT directory on the STARLINK VAX at ROE. This directory also contains the current schedule as well as some information about calibrating data, calculating observing times etc. An updated list of all documents will be sent to all potential JCMT-users in the Netherlands in the first week of March. If you are interested in having one of these documents sent to you by e-mail or normal mail, or if you want further information, please contact me (WECJ@UK.AC.ROE.STAR) or Bill Dent (WRFD@UK.AC.ROE.STAR). In the near future these documents will be accessible from a central point in the Netherlands; more information will be given in due time.

I have compiled a separate e-mail mailing list of Dutch JCMT users to provide up-to-date information and suggestions for writing proposals during the two months before PATT deadlines. If you want to be added to this list, please contact me at the above e-mail address or by telephoning 09-4431-668-8295.

Wil van der Veen

NEWS FROM CANADA

During November 1988 the Canadian AOS (AOS-C) was installed on the JCMT by Russell Redman and Bob Hayward. A 3 MHz frequency offset was present for the first two weeks on the telescope, due to a software mismatch, but this was corrected in mid-December by the JCMT staff. AOS-C has been in regular use by observers since early December, with satisfactory results being reported. The frequency resolution is

about 330 kHz, and there are approximately 2000 channels with a spacing of 250 kHz, covering 500 MHz total bandwidth. As with all acousto-optical spectrometers, there is a small nonlinearity present in AOS-C which depends on the channel number in which a spectral line occurs. This offset has been experimentally determined as a function of channel number. It is always less than 600 kHz (0.8 km/s at 230 GHz, 0.6 km/s at 345 GHz). Corrections for the offset are not made in the software, so those of you who wish to have very precise frequencies or velocities should apply a correction after the fact to your observed frequencies or velocities. Correction tables are available at the JCMT (ask the telescope operator). Morley Bell has returned to Canada after spending a year as HIA's representative in the JCMT Group at ROE. He has been replaced by Jacques Vallee, who will spend three years in Edinburgh.

John MacLeod
HIA, NRC, Ottawa

NEWS FROM THE PANEL FOR THE ALLOCATION OF TELESCOPE TIME (PATT)

PATT Report for Semester P (March to August 1989)

The semester P PATT meeting was held in Swindon on January 12 and 13, 1989. Of the 136 proposals that were considered, 41, plus one Long-Term from semester O, were awarded time. Some of the statistics for the semester are as follows:

Number of 16-hour nights requested	390
Number of nights available for PATT	102
Number of Line proposals	88
Number of Continuum proposals	58
Number with UK PI	59 (43.4%)
Number with CDN PI	34 (25.0%)
Number with NL PI	11 (8.1%)
Number with OTHERS PI	32 (23.5%)
Number of nights awarded to UK	41.8
Number of nights awarded to CAN	22.3
Number of nights awarded to NL	11.4
Number of nights awarded to OTHERS	26.5

Percentage of time to partner countries.

UK	55.3
CAN	28.3
NL	16.4

(Time to OTHERS is credited to the partner countries in the ratio UK/CAN/NL = 55/25/20).

In addition to the 8-hour daytime shifts, 68 full nights were awarded for engineering and commissioning purposes.

L408

JCMT time allocations for Semester P

Proposal	Author	Time(hours)
LT/M/O/ 3	Avery	72
M/P/ 2	Taylor	32
4	Heaton	16
6	Little	16
10	Hasegawa (Tat)	40
11	Robson	24
15	Matthews	24
16	Matthews	48
20	Watt	32
23	Hayashi (S)	32
26	Feldman	32
27	Graf	120
34+71	Wade + Dent	40
38	Dent	24
39	Mountain	32
43	Clegg	32
46	Rogers	32
48	Israel	48
52	Genzel	80
59	Hirano	32
64	Hills	56
68	Lasenby	48
71	Dent	20
77	Hughes (D)	16
LT/M/P/83	Robson	96 + LT status
85	Padman	24
86	Padman	32
87	Yamamoto	32
90	Nadeau	48
93	Stacey	32
102	Tacconi	104
106	Waters	32
109	Richardson	32
115	Moriarty-Schieven	24
117	MacDonald	16
119	Mitchell	40
122	Emerson (J P)	32
126	McCutcheon	48
128	Griffin	32
130	Griffin	32
138	Carlstrom	32
139	Sahu	16

Because of the departure of several key staff members in the Swindon Office the smooth flow of proposals to referees was severely disrupted during this PATT round. It is hoped that this problem will not occur in future semesters and we sincerely apologise for any inconvenience it caused.

On March 1 1989, Dr Jacques Vallée will take over the position of JCMT Technical Secretary.

Morley Bell
JCMT Technical Secretary

A NEWCOMER'S VIEW OF A TIME-ALLOCATION MEETING

My employer in Ottawa had agreed to let me have a Sabbatical Year in Grenoble, but asked if on my way back to Ottawa I could stop for 3 years of Service Duty in Edinburgh! Well, here I am since 1 December 1988 at the Royal Observatory in Edinburgh, doing Service Duty for the James Clerk Maxwell Telescope Unit until 1 December 1991.

Right away, I was asked to perform administrative work as Technical Secretary for the Panel for the Allocation of Telescope Time (PATT) regarding the James Clerk Maxwell Telescope (JCMT) in Hawaii. Thus in December '88 I learned the Lotus 1-2-3 Computerised System and the format set up by my predecessor here (Morley Bell). In January, he and I attended the PATT meeting in Swindon, UK (11-12 Jan. '89).

Also in January '89, I was singled out as the one who shall draft all the letters to all the applicants for JCMT time (successful and unsuccessful), a task which wiped out all of my time in January and the beginning of February!

In the remainder of this note, I would like to give you some of my views as a newcomer at a PATT meeting, held 11-12 Jan. '89 in Swindon. What a hectic meeting - having to provide so many answers in just 2 days! Most of the meeting was to decide who will get observing time on several telescopes involving the UK, including the JCMT, during semester P (March '89 till August '89 inclusive).

A well-fought debate concerned whether or not to get rid of the refereeing of all proposals for telescope time! Some pushed strongly for removing the refereeing process, and having more assessors instead. Apparently, the two work peaks in Dec./Jan. and in June/July are difficult for the clerical staff in Swindon, and SERC wants to reduce manpower further.

A show of hands around the table refused to get rid of referees. One of the arguments for keeping referees is that only a minority of proposals (40 out of 140 for the JCMT for Semester P) gets observing time, so each proposal awarded time must have been thoroughly checked. Referees have time to check thoroughly 1 or 2 proposals, but the assessors who must look at and give a grade (1=lowest; 6=highest) to all proposals (140 for the JCMT) don't have enough time.

Instead, the table suggested considering a move to ease the bottleneck at Swindon by splitting the PATT meeting into two halves: one half (optical, say) would meet in January and July, the other half (radio, say) would meet in April and October. This would entail a rephasing of semester R for half the telescopes. Such a rephasing would require consulting with other bodies (e.g., in Hawaii). No doubt this item will be rediscussed!

Science wise, the general philosophy seemed that top rated proposals should get all the time they wanted, to ensure that they get completed. This reduces the demand on instrument changes, and is cost-effective.

People applying for observing time on the JCMT should give details on: beam wanted, expected flux density, expected source size, expected line width, frequency wanted, and if a long term status is desired.

An appeal was received from a proposer in a previous round (Semester O). For the JCMT matters, it was felt that appeals are not proper here, and that a submission of a modified proposal should be made instead.

The percentage of engineering, commissioning, and discretionary time available in a six month period on a telescope was discussed. Typically a value of 10% to 15% seems desired, and it is obtained on most telescopes, but not on the JCMT where it is about 30% to 40%.

All the time requested for commissioning was awarded for semester P. PATT priorities for the JCMT engineering time were: pointing (high), holography (next). All the time requested for engineering was awarded, plus a small amount of discretionary time.

J.P. Vallée
(NRCC at ROE)

APPLICATIONS FOR TELESCOPE TIME: ARRANGEMENTS FOR SEMESTER Q

For Semester Q (September 1989 - February 1990): the closing date for applications will be April 30, 1989. Postal applications should be sent to:

The Executive Secretary, PATT
SERC
Polaris House
North Star Avenue
SWINDON SN2 1ET

Enquiries may be made by telephone (0793 411198) or Telex (449466). Application forms may be obtained from the above address, as also may sets of Notes for the Guidance of Applicants. Those who have not previously applied for telescope time on SERC telescopes are strongly advised to obtain copies of these Notes.

In Canada copies of the application forms can also be obtained from the Radio Astronomy Section of the Herzberg Institute of Astrophysics.

The application form to be used for Semester Q is the same as that for previous semesters. A new form is being prepared and will be used for the first time for Semester R applications.

INSTRUMENTS ON JCMT

The following instruments should be available to users on the JCMT during semester Q (September 1989 - February 1990).

Heterodyne (spectral line) receivers:

Receiver A1.

This receiver nominally covers the frequency range 220 - 275 GHz. Two mixer sets are used to achieve this range: A1(lower) operates well up to 240 GHz, while A1(upper) is better at frequencies above 240 GHz. Frequencies somewhat outside this range may be accessible with some degradation of performance. Receiver A1 is a dual-channel device, and thus is receptive to both polarizations. However, this depends on the availability of two mixers covering the same frequency range; so far only one working mixer has been available in the upper frequency band, and for the present Receiver A1 is operated in a 'hybrid' mode, with one mixer from each frequency range. Observations are possible only in one frequency band at a given time, and thus only single polarization observations are currently carried out. Depending on the availability of mixers, this situation may be reviewed for Semester Q. Typical double sideband receiver temperatures at the band centres are 380 K and 560 K for the lower and upper bands respectively, corresponding to single sideband system temperatures of about 900 and 1300 K respectively in the best cases. Receiver temperatures will be considerably higher away from the band centres.

Receiver B1.

This is a single channel (polarization) receiver, which has recently been fitted with a new

carcinotron and mixer. In recent tests the lower frequency limit of the receiver was found to be about 326 GHz. The upper limit has not been determined so far; however, in laboratory tests the carcinotron was found to deliver good performance at all frequencies up to at least 380 GHz. The limiting factors at the telescope are the atmosphere, which has an absorption band around 373 GHz, and the high voltage power supply, which may limit the accessible frequency range to still lower frequencies. Tests relating to this are not complete at this time. Typical single sideband receiver temperatures at the band centre are about 900 K, corresponding to double sideband system temperatures of about 2700 K. These values will be worse away from the band centre.

Receiver C1.

At the time of writing this receiver has not been delivered to the JCMT, but present plans call for a commissioning period in June this year. If these tests are successful, the receiver will be available to users in Semester Q. There is a corresponding lack of final information on receiver temperature and so forth at the moment. However receiver C1 will operate in two narrow ranges: 461 ± 1 GHz and 492 ± 1 GHz, allowing access primarily to the CO (J=4-3) and CI (neutral carbon) (3P1-3P0) fine structure lines. The technology used in Receiver C1 is different from that of either A1 or B1: InSb 'hot electron' detectors are used as mixers, and the corresponding instantaneous bandwidth is about 1 MHz. Thus, in order to build up a spectrum, the local oscillator frequency is 'swept' or stepped across the line. The nominal spectral resolution is about 2 MHz, but there are provisions for filters to provide narrower resolutions. The device will receive both polarizations. Recent measurements of the mixer noise temperatures give about 500 K. Thus, if one combined both channels, a typical system temperature at 460 GHz would be about 1500 K per spectral channel under good conditions. The value at 492 GHz is likely to be rather larger than this. However, the effective system temperature increases as the square root of the number of spectral channels observed, so that if one wanted to observe a spectrum consisting of 30 points, say, the value of T(sys) to be used should be about 8000 K at 460 GHz, and possibly as much as 15000 K or more at 492 GHz.

Receiver G

Thanks to the continuing arrangement with Reinhard Genzel and his group at the Institut fuer extraterrestrische Physik in Garching, Receiver G should be offered once again for users in Semester Q. Interested users should contact either Prof. R. Genzel or Dr. J. Stutzki to arrange collaborative efforts. As described in 'Protostar' (Sept. 1988) the instrument is largely self-contained. Because LO power is provided by an infrared-pumped laser, only certain discrete frequencies can be accessed, in the regions around the CO J=6-5 and 7-6 lines at about 690 and 800 GHz respectively. In the 800 GHz region, the HCN and HCO⁺ (J=9-8) lines can be observed, along with the neutral carbon (3P2-3P1) transition. In general the IF bandwidth is about 1 GHz, and two 'on-board' 500 MHz AOS's having spectral resolutions of 1 MHz are provided. By Semester Q it is most likely that Receiver G will be mounted on the right Nasmyth platform of the JCMT, where its installation will no longer require the removal of the UKT14 bolometer system. Typical double sideband receiver temperatures range from 3200 through 4500 K. The resulting single sideband system temperatures are extremely sensitive to atmospheric conditions, but are likely to be of the order of 55000 K or more, under practical conditions. One month (likely to be October or December) will be set aside specifically for observations with Receiver G; interested users should develop proposals with this in mind, and be aware that a low-frequency back-up proposal is also essential.

Continuum Observations

UKT14

The UKT14 bolometer system will be available in Semester Q with the standard full range of filters to permit observations at 2, 1.4, 1.1, 0.8, 0.6, 0.45 and 0.35 mm. Sensitivities range from typically 0.2 Jy/sqrt(Hz) at the longer wavelengths, through to 10 Jy/sqrt(Hz)

or more at the highest frequencies under good photometric conditions. Only about 30% of all nights allow one to achieve meaningful results at 450 and 350 microns, however. A major problem until the present has been obtaining good calibration of UKT14 data; the introduction of in-line chopper-wheel calibration (to be tested in March this year) should remove much of this difficulty.

UKT14 polarimeter

Also in March, commissioning tests are to take place with a polarizing waveplate attached to UKT14. If these tests are successful, it should be possible to carry out submillimetre continuum polarization observations with the JCMT in Semester Q. Two modes of operation are planned: (1) normal photometry (chopped, beamswitched) with the polarizer fixed at different angles, and (2) detection of signal modulation as the polarizer waveplate is spun continuously (non-chopped). Pending extensive tests to determine instrumental limits, no suggestions can be offered as to the sensitivity of the polarimeter to source polarization. (*Latest news is that commissioning has been delayed and a new date has yet to be fixed. You may still submit proposals to use the polarimeter in Semester Q - but be prepared to be disappointed. Ed.*)

Spectrometer Backends

Currently only one spectrometer can be expected with confidence to be in use at the telescope: AOSC is an acousto-optical spectrometer which offers a resolution of about 330 kHz and a total bandwidth of 500 MHz. Of the two other spectrometers, AOSD and the autocorrelation spectrometer ('KENT'), a decision will be taken during the current semester which to maintain on a longer term basis until the arrival of the DAS (an autocorrelation spectrometer being built in The Netherlands, expected to be commissioned during early 1990). AOSD offers a spectral resolution of 1 MHz and a total bandwidth of 500 MHz, while KENT has a range of spectral resolutions from 880 down to 110 kHz, with a maximum total bandwidth of 320 MHz. Both backends have suffered serious hardware failures within the last year.

Telescope Performance

The mean surface rms accuracy over the whole 15m diameter of the JCMT is at least as good as 39 microns, and is probably closer to 35 microns. At the longest wavelengths (using, say, Receiver A1), the beamwidth and beam efficiency are about 21 arcsec and 0.79 respectively, at 460 GHz the corresponding numbers are about 11 arcsec and 0.55, while at the highest frequencies in use (around 800 GHz) they fall to 6 arcsec and 0.15. The rms pointing errors are currently about 3 arcsec in both azimuth and elevation; because of the increasing use of the higher frequencies, considerable effort will go into reducing these errors in the near future when test time is available.

*Henry Matthews
JACH*

THE SUPPORT SCIENTIST'S CORNER

Preparations for an observing run

The majority of observers that come out to use JCMT are usually well prepared for their observing run, but it probably does not hurt to summarize what preparations are needed to ensure a hopefully successful run on JCMT.

1. After you get the schedule with your allocated observing time, you should check the LST interval to make sure that your sources are actually visible. If not, please contact the Astronomer-in-Charge immediately.

2. Read through your proposal, make sure that you have a complete source list with accurate positions. In case you are doing spectral line work, you will also need to find out the radial velocities of your sources (if they are not known - the expected range) and suitable reference (off) positions for each source. These reference positions are essential, especially for CO work. You can normally get a fair estimate using large scale CO surveys, Palomar sky survey plates etc. Occasionally you might find information in earlier publications. If you are not absolutely sure that your reference positions are free from molecular line emission, you will have to start your run (i.e. after you made sure that the system works) by verifying this, i.e. by measuring the off position against another off position even further away from your source. Make sure that you know all rest frequencies accurately, so that you don't have to waste time searching for them when you are to start observing.

You should also make sure that you have a backup program, which is equally well prepared as your main program. You will need to check with the Astronomer-in-Charge that your backup program does not overlap with any other allocated PATT program.

3. Make sure that you have a valid medical, and that you book your flights in good time before the run. Inform Hilo (Donna deLorm) about your travel plans, and arrange booking for HP (Hale Pokahu, the mid level facility). Remember that you can also get cheaper rates, by having the JCMT secretaries to make your hotel bookings and rental car (Phillips U-drive, used by JAC, prefers an International driver's license or at least the words DRIVER'S LICENCE in English on your document).

Contact your support scientist, if you have any questions. If you feel that your program may be tricky, or that it requires special equipment or observing techniques, then it is absolutely essential that you contact your support scientist, so that he/she advises you or helps you get in contact with somebody who can.

If possible, arrange your travel so that you can spend one full afternoon in the Hilo office with your support scientist. Remember, that if you arrive late in the evening, you may not be able to get transport to HP.

4. When you arrive in Hilo, find out the status of the telescope, front ends and backends. Be prepared to modify your program according to the current situation. The pointing can be lousy, the receiver may be much noisier than anticipated, and perhaps it is not even available. At this stage you should stay calm and try to remember that JCMT is not fully commissioned. Also, a lot of things may have changed since you last used the telescope.
5. When you are in Hilo, or at HP, you can transfer your source list onto the JCMT MicroVAX. You should also discuss with your support scientist about suitable pointing and calibration sources, the current sensitivities of the instruments and what the expected overheads are, i.e. your observing efficiency. If you are using UKT14, you should run through the planetary flux program (JCMT_FLUX) and compute beforehand the expected signals for the planets you are going to use. If there are no planets available, find out what is known about secondary calibrators. You should also familiarize yourself with any documentation you can lay your hands on about JCMT, receivers, software and data reduction programs.

With all this information, you can now plan your observing program in detail. However, be aware that instrumental problems or weather conditions can completely change all your plans. Therefore you will also need to consider how you can cut down your program and still get publishable results.

Remember that a well prepared run is the first essential step towards success.

Göran Sandell
JACH

JOTTINGS FROM JOCELYN'S JOURNAL

Jargon jaw - JCMT Users' committee

Users' Committee met at the Royal Observatory, Edinburgh at the end of October for a two day meeting with a substantial agenda, under the Chairmanship of Professor Ian Robson.

The allocation of time on the JCMT in semester O, and the criteria to be used in allocating time were discussed. Dr Richard Hills gave a verbal report on the Kona conference on mm and submillimetre astronomy which had been held only a few weeks previously. The use of receivers from outside the collaboration was discussed and it was agreed that ROE should seek to extend the present arrangement with Professor Genzel for the use of his 800 GHz receiver. A proposal for a long-term instrument construction programme was discussed and forwarded to JCMT Board (this programme is outlined elsewhere in Protostar). A report by the computing services group in Hilo on hardware, software and staffing arrangements was noted. Following the presentation of a paper on data archiving Users' Committee agreed to recommend to Board that the proprietary period, during which an observer had sole rights to the data, should be one year, and that then the catalogues and archives should be open to all without restriction.

At the invitation of Dr Daniel Nadeau, the next JCMT Users' Committee will be in Montreal on 18th April 1989.

Jumbo journey - JCMT Board

If the mountain won't come.....JCMT Board met in Hilo, Hawaii at the end of November for a three day meeting that included a visit up the mountain, to the telescope, and an opportunity to meet and have discussions with JCMT staff in Hilo.

In the main business sessions the Board received a report on operations and discussed the allocation of time for engineering tasks on the telescope. The computing services group report and the report on data archiving arrangements were also discussed by the Board. Progress with the purchase of additional rooms at Hale Pohaku, the mid-level dormitory accomodation, was reported and Board approved revised costs. The Board also approved funding for a 345 GHz prototype SIS receiver (to be built by RAL and the University of Kent in the UK and HIA in Ottawa), and the Bolometer Array to be built by ROE; further funding for the polarimeter and receiver C was also agreed. The possibility of acquiring SIS devices from laboratories outside the consortium is to be investigated, and the outline receiver construction plan was agreed. A Financial Procedures Review Panel has been studying the appropriate format for financial papers to be put to Board, and its report was discussed. One of the papers will in future have 41 lines and 12 columns of figures! As did Users' Committee, Board also considered the allocation of telescope time and the use of receivers from outside the collaboration.

Board members found this a useful visit and agreed that the Board should meet in Hilo from time to time. The next Board meeting will be in Ottawa on 1st and 2nd June 1989, the meeting to include an opportunity for Board members to meet Canadian users and instrument builders.

Jocelyn Burnell

COMPOSITION OF THE USERS' COMMITTEE

There has been one recent change in the membership of the Committee; Dr P.R. Wesselius has taken the place of Dr Herman van de Stadt. The members are now as follows:

Professor E.I. Robson, Lancashire Polytechnic (Chairman)
Professor Dr W.B. Burton, Leiden
Dr M. Griffin, Queen Mary College
Dr J.C.G. Lesurf, St Andrews
Dr T.J. Millar, UMIST
Dr D. Nadeau, Montreal
Dr P.F. Scott, MRAO
Dr E. Seaquist, Toronto
Dr P.R. Wesselius, Groningen
Dr G. Wynn-Williams, Hawaii

DOCUMENTATION

The following JCMT documents have recently been released or updated:

[JCMT.DOCS]STATUS.DOC - latest information on telescope, receivers etc.
[JCMT.DOCS]UKT14_PRIMER.DOC - information for anyone with data from UKT14
[JCMT]USERGUIDE.LIS - new version of JCMT manual
[JCMT]JCMTSCHED_P.DOC - Semester P schedule

A list of all available documents can be found in

REVAD::DISK\$USER1:[JCMT]JCMTDOCS.LIST

W. Dent

PUBLISHED PAPERS

JCMT observations have been used in the following *published* papers (there may be others):

The detection of a discrete outflow from the young stellar object GL490.
Mitchell, G.F. et al. 1988 Astron.Astrophys. 201, L16.

New bipolar outflows in dark molecular clouds.
Parker et al., 1988 Mon.Not.R.astr.Soc., 234, 67P.

The dust content of nebulae.
Hoare, M.G. et al., in Dust in the Universe, eds. Bailey, M.E. and Williamson, D.A. 107-111, 1988. Cambridge University Press.

Evidence from sub-millimetre observations for thermal dust emission in NGC 4151.
Edelson, R.A. et al., 1988 Nature 336, 749.

Authors of papers based wholly or partly on observations with the JCMT are reminded that the Joint Astronomy Centre in Hilo (JACH) and the JCMT Section at ROE would be glad to receive copies.

BOOK REVIEW

Millimetre and Submillimetre Astronomy
Lectures presented at a Summer School in Stirling, Scotland
R.D. Wolstencroft and W.B. Burton, editors
Kluwer Academic Publishers
Price: DFL 199.00 £54.00

If you are interested in getting into the new field of submillimetre astronomy but are inhibited from doing so because you don't know your carcinotron from your Schottky or, like me, are a product of the old school of astronomy and consequently not too comfortable with thoroughly modern Milli Jansky, this is the book for you (and me). Based on lectures given in June 1987 by some of the most active people in this branch of astronomy, the book in its early chapters gives a very useful introduction to the instrumentation and techniques used while the later chapters deal with applications to current areas of research. Although rather expensive for the individual astronomer (get your friendly neighbourhood IAU member to order at discount) this volume should find a home in astronomy departments with an interest in using the JCMT or similar telescopes.

Alex McLachlan

STAFF CHANGES AT ROE

Morley Bell has returned to HIA after one year at ROE. His role as TAG Technical Secretary has been taken over by Jacques Vallée who is on a three year detachment from HIA.

Wil van der Veen is now in post on a three year appointment.

Richard Prestage has transferred from ROE to JACH to join the software team there.

Following a recruitment exercise the two vacancies in the JCMT team caused by Richard's departure and Walter Gear's transfer to the SCUBA project will be filled later in the year by Dr John Lightfoot and Dr Alistair Glasse.

LATE NEWS FOR CANADIAN ASTRONOMERS

The Bulletin Board method of distributing JCMT information within Canada has not been entirely satisfactory because of the complexity of entering items. Dr Russell Redman at HIA, Ottawa has therefore devised a new scheme based on a LIST SERVER, an e-mail redistribution system. An announcement about this will be sent by Dr Redman by regular post to astronomers in Canada on the PROTOSTAR mailing list.

DIARY

- April 18, 1989: JCMT Users' Committee meets in Montreal.
- April 30, 1989: Last date for receipt by PATT of applications for Semester Q (September 1989–February 1990).
- July 3–8, 1989: 11th European Regional Astronomical Meeting, New Windows to the Universe; Tenerife, Canary Islands, Spain.
- July 3–6, 1989: Second Wyoming Conference on the Interstellar Medium: Interstellar Medium in External Galaxies; Grand Teton National Park.
- June 4–9, 1990: IAU Symposium No. 146: Extragalactic Molecular Clouds: Dynamics and Relation to Star Formation; Paris, France.

STARLINK Directory of JCMT News

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Telephone: ROE has a new telephone system that allows extension numbers to be dialled. The numbers for the JCMT Group are as follows:

031 668 8295 Wil van der Veen (UC Secretary)
8306 Dorothy Skedd (Section Secretary)
8307 Bob Stobie (Division Head)
8314 Bill Dent (TAP Secretary)
8316- Jacques Vallée (PATT Technical Secretary)
8316 Alex McLachlan (PROTOSTAR Editor)
8317 Jocelyn Burnell (Section Head)

The number to dial for the ROE switchboard is:

031 668 8100

Telex: 72383 ROEDIN G

FAX (new number): 031 668 8264