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Mawson Fabry-Perot Spectrometer
Data Catalogue

P.A. Greet

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MAWSON FABRY-PEROT SPECTROMETER DATA CATALOGUE 1980–1995

P.A. Greet

Atmospheric and Space Physics
Australian Antarctic Division
Kingston Tasmania 7050

1. INTRODUCTION

The Mawson Fabry-Perot Spectrometer (FPS) was designed and built by Dr Fred Jacka in collaboration with Don Creighton, electronics engineer, and other staff and postgraduate students of the Mawson Institute for Antarctic Research (MIAR), at the University of Adelaide. MIAR was closed in 1990 and the FPS is now on permanent loan to Professor Peter Dyson at La Trobe University. Since 1990 it has been run by Professor Dyson in collaboration with the Australian Antarctic Division. A second instrument has been installed at Davis and will become operational in 1995.

Data have been collected using the Mawson FPS since 1981. The data have been collated into a single archive set spanning 1981–1995. This document has several aims: explain the format of the data in the archive, list the data available, list instrument modifications which have had a significant effect on the form of data collected, and describe the format of files. The data have been saved in Vax backup format to preserve the directory structure which has been implicit in the analysis procedures used to date. No responsibility is taken for the analysis results that have been archived. It was, at the time of production, the latest analysis available but the results given may not be meaningful and should not be used without reference to the author listed in the summary file. A list of contact names and addresses is given in Appendix 3.

Table 1 summarises the data available. The wavelength observed in any given month for the years 1981 – 95 is shown. Table 2 indicates the people responsible for running the Mawson FPS in the years 1981 – 95. At times through these years other expeditioners have assisted when those indicated in the table have been off-station. We would like to acknowledge general support of station expeditioners particularly Antarctic Division Atmospheric and Space Physics (ASP) engineers, the diesel mechanics who have made or modified bits and pieces for the instrument, and others who have helped when necessary.

If you wish to use the analysis results you should discuss this with both Professor Dyson and, particularly for data collected prior to 1992, the person responsible for collecting the data. For data collected prior to 1992 the person responsible for collecting the data should be offered co-authorship in any paper in which the FPS data forms the basis of any substantial part of a paper. The Australian Antarctic Division should always be acknowledged as providing logistic support for collection of the data. The Australian Antarctic Science Advisory Committee (ASAC), the Australian Research Council (ARC), the University of Adelaide, and since 1991 La Trobe University, have all provided financial

Table 1. Summary of Mawson FPS observations. The number indicates that some observations at this wavelength (specified in nm) were made in this month of the given year. For more details, e.g. type of observations, daytime, twilight, or night-time, duration, etc see the list files in Section 7.

year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1981		630		630		630	630	630	630 558	630 558		
1982	630	630										
1983	630	630	630	630	630	630	630		630	630	630	630
1984		630	630	630	630 558	630 558	630 558			630 558		630
1985	630	630							558	558		
1986	630		630	630	630			630	630			
1987												
1988												630
1989	589	589	589	589 558 630		558	589 558	589 558	589 558	589 558	589	
1990		589	589	589	589	589 558	589 558	589 558	589 558	589 558	589	589
1991		589						589	589	589		
1992			630	630	630	630	630	630	630	630	630	
1993		630 840	630	630	630	630	630	630	630	630		
1994				630	630	630	630	630 840	630	630		
1995			630	630	630	630	630	630	630			
		840	840				840	840		840		

support for the project. This should be acknowledged. For data collected since 1992 both the Australian Antarctic Division and Professor Peter Dyson should be consulted as to the appropriate procedures.

The principles of the Mawson FPS have been described in detail by Jacka (1985). A complete bibliography of works produced using the Mawson FPS is given in a later section. For comprehensive descriptions of the data collected the original log books should be consulted. These log books are held in archive by the Australian Antarctic Division.

Table 2. Personnel at Mawson responsible for running of the FPS.

Year	Personnel	Duration
1980	Ivan Reid	winter
1981	Norman Jones	winter
1982	Norman Jones	81/82 summer
1983	Norman Jones Paul Wardill	82/83 summer winter
1984	Mark Conde	winter
1985	Mark Conde Gina Price	84/85 summer winter
1986	Mark Conde	winter
1987	–	–
1988	Mark Conde Pene Greet	88/89 summer 88/89 summer
1989	John French	winter
1990	Pene Greet	winter
1991	Damian Murphy	winter
1992	Mark Conde Pene Greet	winter 92/93 summer
1993	John Innis	winter
1994	Michael Manion Damian Murphy	winter 94/95 summer
1995	Simon Edwards	winter

2. DATA FORMAT

The Mawson FPS scans in wavelength through emission profiles. Originally one or two blocks of memory could be used allowing profiles of 128 or 256 channels. The wavelength region scanned can be calculated from the wavelength, order, and channels per order. Profiles are recorded in the following form, for a 128 channel profile:

240 06 141000 150454 000 000 6 SKY 2 0 007 001 050 61 98
102 99 108 85 107 137 113 108
118 112 135 145 120 131 145 119
148 157 159 170 160 170 198 164
188 194 195 225 187 212 246 264
308 296 320 361 366 424 486 540
676 841 1064 1293 1769 2262 2964 3733
4597 5571 6295 6664 7273 7051 6704 6262
5107 4011 3070 2193 1600 1152 843 683
563 454 426 333 289 253 230 207
196 174 157 145 142 129 127 109
105 101 97 88 77 83 80 82
74 64 66 76 59 55 67 53
72 62 52 40 56 49 54 49
49 40 55 47 51 41 51 42
39 45 53 33 40 49 56 53
63 50 52 59 36 65 49 53

The first line of each profile records instrument status. This HEADER is a 56 character block written for each 128 channel memory block. If the signal averager is in single block mode (i.e., if the memory selector is in position 1 or 2) then the appropriate single 56 character header block is written, followed by the 16 rows of 8 numbers which comprise the data. If the memory selector is in BOTH or ALTERNATE mode when the data is recorded then the following is written to tape:

header block 1
header block 2
data block 1
data block 2

To unpack the header information the subroutine STATUS4 is used. (Details of subroutines and programs will not be given. Refer to Vax listings and documentation). It provides the following information on the original determination of header components. The numbers refer to the character position in the header.

1-3 : DOY A three digit integer read from the DOY thumbwheel of the periscope chassis. Usually set by the operator to be equal to the number of the day of the year.

4 : blank

5-6 : SEQ - A 2 digit integer read from the SEQUENCE thumb wheel on the periscope chassis. Usually set by the operator to provide a reference number for the profile.

7 : blank

8-13 : A string of three pairs of integers (HS, MS, SS) which contain respectively the number of Hours, Minutes, and Seconds of the time of the Start of the acquisition of the profile, as read from the clock in the periscope chassis. (Usually set to UNIVERSAL TIME).

14 : blank

15-20 : HF, MF, SF. The time of Finish of the acquisition.

21 : blank

22-24 : ZEN – A three digit integer between 000 and 900, giving the pointing angle (from zenith) in tenths of a degree. If the periscope is parked (asleep) then ZEN = 999.

25 : blank

26-28 : AZI – A three digit integer between 000 and 359, giving the periscope azimuthal pointing angle in whole degrees from GEOGRAPHIC NORTH. ZEN = 999 if the periscope is ASLEEP.

29 : blank

30 : FIL – A single digit integer giving the filter wheel position.

31 : blank

32-34 : VSW – A 3 letter word written by the signal average as either SUN or SKY to indicate the VIEW SWITCH status. May have been modified in some edited data to indicate the purpose of the profile e.g. DRK = dark counts and CHD = channels per order calibration.

35 : blank

36 : BLK – A single digit which will be equal to either 1 or 2 to indicate which half of the memory the header is for.

37 : blank

38 : MEM – A single digit which indicates the mode of the signal average at acquisition time.

0 alternate mode
1 block 1 mode
2 block 2 mode
3 both mode

39 : blank

40-42 : SCN – A 3 digit integer equal to the number of scans summed to give the profile.

44-46 : FRM – A three digit integer equal to the number of sun/sky sequences executed. e.g. If using a sun/sky ratio of 2:10, and a frame number of 7, then block one SCN would be 10 * 7 = 70, block 2 scn would be 2 * 7 = 14, and FRM would be 007 in both blocks. When operating in 'both' mode, FRM = SCN.

47 : blank

48-50 : DWL – A three digit integer equal to the dwell time per channel in milliseconds. This is set to 000 if 'external clock' is used.

51 : blank

52-53 : S1 – A two digit hexadecimal status word. (i.e. 8 bits)

Bit 0 Scan attenuation LSB = AT0
1 Scan attenuation MSB = AT1
2 Prescale LSB = P0
3 Prescale MSB = P1
4 LRFP Out bar
5 LRFP In bar
6 Lab Source Carrier Out bar
7 Analog/Digital bar acquisition

54 : blank

55-56 : S2 – Another 2 digit hex status word.

Bit 0 Sky Gain LSB (G1)
1 Sky Gain (G2)
2 Sky Gain MSB(G3)
3 Sky damping low/high bar
4 Sun Gain LSB (G1)
5 Sun Gain (G2)
6 Sun Gain MSB (G3)
7 Sun damping lo/hi bar

Profiles are separated by a blank line. Profiles of similar type are collected into a single file. In these files 128 and 256 channel profiles are not mixed as analysis procedures cannot handle profiles of varying length. Apart from a couple of months at the start of observations in 1981 when profiles of 256 channels were collected all observations are 128 channels in width and use of 256 channels is only for calibrations.

3. FILES

Profiles are grouped into files with each file containing similar profiles. What follows is a list of the common file names and their contents. A four letter code is used to identify the file contents and the day number is appended. When data or analysis has been performed on a number of different wavelengths the wavelength is used to discriminate between one data set and another; e.g., DRFT200.558 and DRFT200.589 indicate files of drift profiles for oxygen λ558 nm and sodium λ589 nm taken on DOY 200. These files would have the same label whether they were recorded on day 200 in 1989 or 1990. Their position in the directory structure makes them unique.

Calibrations are usually found in the following files:

DRFT Drift profiles recorded at regular intervals through the observing period. These profiles are usually of the mercury lamp but in some cases, e.g. during 1989 and 1990, the neon λ630.5 nm line was used to monitor drift.

CHRD A 256 channel profile which covers more than one order – two full peaks – enabling the number of channels per order to be calculated. The wavelength is unspecified.

DARK Profiles obtained with the shutter closed to monitor photomultiplier dark count. In early years we also monitored leakage; profiles obtained with the shutter open but the calibration fibres darkened. These profiles were used to check the leakage of light from the parallelism light source into the output optics. Once low pass filters were incorporated into the output optics this was no longer necessary at visible wavelengths.

FSLS A frequency-stabilised laser, operating at λ632.81646 nm, was introduced for calibrations in 1992. Non-stabilised helium-neon lasers are usually labelled LASR.

HGTP Mercury λ546 nm profiles with two full peaks as used for channels per order calculations.

SEED A high signal-to-noise mercury λ546 nm profile used to define the instrument function.

INST A high signal-to-noise profile used to define the instrument function. Usually mercury λ546 nm but may be sodium lamp or frequency-stabilised laser in some cases.

D2PR Profile of the D2 line of the sodium doublet, high signal-to-noise to determine the instrument profile at sodium wavelengths.

WHIT White light source profiles. There is a white light source embedded in the laboratory source carrier. It is used for monitoring alignment of the etalons in dual-scanning etalon operation.

VCOS Voltage Controlled OScillator profiles, used for analogue acquisition (dual-etalon profiles) where the output voltage offset varies according to the gain setting. Obtained with the shutter closed.

ORDR A collection of profiles at different wavelengths collected for an order determination, OR, a file containing input for running the program ABO to determine the absolute order.

Observations are usually found in the following files:

NRED Night-time oxygen λ630 nm emission line profiles, single-etalon observations.

TRED Twilight oxygen λ630 nm emission line profiles, may be either dual or single etalon. Will be indicated in the year summary file or the daily NOTE file.

DRED Daytime oxygen λ630 nm emission line profiles. Dual-etalon observations.

ZRED Oxygen λ630 nm emission line profiles obtained in the zenith only. This naming scheme was only used in early years. Later zenith only profiles are stored in NRED or other appropriate files.

NGRN Night-time oxygen λ558 nm emission line profiles, analogously can also have DGRN, TGRN, and ZGRN files. The latter are not frequently required.

TD2S Twilight D2 sodium λ588.995 nm emission profiles obtained with single high-resolution etalon. This emission is produced by resonant excitation by sunlight and thus night-time profiles were not obtained.

DD2S Daytime D2 sodium λ589.592 nm emission profiles obtained with the dual-scanning instrument configuration.

TD1S Twilight D1 sodium λ589.592 nm emission profiles obtained with single high-resolution etalon, similarly DD1S. Most Mawson sodium observations were of the brighter D2 line.

OHQD Hydroxyl (6–2) Q branch line, λ834.046 nm. This line has Λ-doubling of 5.5 pm, just resolvable by the Mawson instrument.

OHPD Hydroxyl (6–2) P branch line, λ834.046 nm. This line is a doublet of 19 pm separation due to Λ-doubling.

Results are usually found in the following files:

LOGG A file recording information, geophysical parameters of the day, and other data required for plotting purposes. (See Appendix 1 for sample LOGG file.)

NOTE Files introduced by Mark Conde to record brief notes on observing conditions. Also used to include comments on analysis and files produced by analysis.

OPTN Option files were introduced by Mark Conde when automating the analysis programs. These files can be used to modify parameters used in analysis. Some global options files are kept in the FPSRESMAW directory or an OPTN file can be included in the day directory if parameters need to be customised for an individual day.

FTIN Fourier Transform of the INstrument function at observing wavelength. Where more than one wavelength is used in any day the wavelength is used as the file extension to discriminate.

FTIC Fourier Transform of the Instrument function at Calibration wavelength.

FTLP Fourier Transform of the sodium Lamp Profile as used in the instrument profile. This technique is no longer used.

*RES Analysis programs produce an array of 18 items for each profile (discussed in a later section). These arrays are stored by the program. They can be labelled with any leading letter. Some standard names follow:

ORES Observation RESults array, output from the program PROFILE.

DRES Drift RESults array, output from the program PROFILE.

CRES Results array, output from programs CALFILE or OBSFILE.

BRES Mean from averaging all profiles in CRES files using program AVALL.

FRES Final RESults array, including winds. Output from WINDCAL.

WSAM Wind SAMples at regular specified intervals. Output from WINDCAL.

TSAM Temperature SAMples at regular specified intervals. Output from WINDCAL.

ISAM Intensity SAMples at regular specified intervals. Output from WINDCAL.

DSUB Daytime SUBtraction feature. Output from program DAYSUB which normalises the sun spectra and subtracts it from the sky spectra. This results in the sky emission feature which is stored in DSUB.

This is not an exhaustive list. Any four letters can be used to describe a file. If new names are required make the four letters as self-explanatory as possible. It would be preferable NOT to use a name already used for a different purpose. The following sections give the format of some of the analysis files.

4. LOGG AND OPTN FILES

The LOGG file was introduced by Norm Jones and Paul Wardill when setting up the analysis programs on the Vax at Adelaide in 1985. It was designed to contain all the relevant information for analysing a day's data. When the LOGG file is read the data are grouped into common blocks for passing to various subroutines. A sample LOGG file is in Appendix 1. The line number, and a blank are followed by the required information for each line. Comments are included in this sample. The instrument location is important as, due to the type of piezo-electric ceramic stacks supporting the etalon, the Mt Torrens and Mawson interferometers scan in different directions, i.e. one to increasing wavelengths, the other to decreasing wavelengths.

Not all pieces of information in the LOGG file are used in every program. Most FPS programs will work if information is supplied in lines 1–32. The programs may work whether the information is correct or not however the results from programs will not be correct if the LOGG file is not correct. The mass, order, wavelength, and channels per order for the observing and calibration species is important in a number of programs. Hence if these programs are run on different wavelengths then the LOGG file must be changed. To accommodate this some days have a number of LOGG files. Observations are usually recorded in LOGGnnn.DAT. In 1994 LOGGnnn.CAL was constructed with mercury as the observing species and the frequency-stabilised laser as the calibrations species. This allows the mercury profiles to be analysed using the frequency-stabilised laser to determine the instrument function. Similarly LOGG files, LOGGnnn.589 and LOGGnnn.558, were used in 1989 and 1990 for observations at the two wavelengths.

Some information previously supplied by the user responses to prompts in analysis programs has been replaced by OPTN files. Mark Conde introduced OPTN files when automating analysis in 1992. OPTN files are simpler with variables equated to a specified value. If a variable is not specified a default value is used.

The sample OPTN file, given in Appendix 2, only resets a few of the available options. As this document is not discussing analysis procedures it is not appropriate to present the complete options set. See general documentation in the FPS program library and the subroutine READ_GLOBOP.

5. *RES FILES

The ORES, DRES, FRES series of files are used to store the results of analysis programs. ORES and FRES have a slightly different form of output. The results are stored in an array ORES(18, NRES) where NRES is the total number of profiles. The values are written by the subroutine SUMMARY which stores them in intermediate arrays NSUM, CSUM and RSUM as indicated. The array items, for a profile NPROF, are values for:

ORES(1,NPROF)	= NSUM(NPROF,1)	= seq	sequence number 0 – 99
ORES(2,NPROF)	= CSUM(NPROF,1)	= tc	central time of profile
ORES(3,NPROF)	= CSUM(NPROF,2)	= te	elapsed time of profile
ORES(4,NPROF)	= CSUM(NPROF,3)	= direc	direction
ORES(5,NPROF)	= RSUM(NPROF,1)	= pkch	peak channel
ORES(6,NPROF)	= RSUM(NPROF,2)	= sepkch	standard error pkch
ORES(7,NPROF)	= RSUM(NPROF,3)	= wne	e^{-1} width
ORES(8,NPROF)	= RSUM(NPROF,4)	= sewne	standard error wne
ORES(9,NPROF)	= RSUM(NPROF,5)	= tem	temperature
ORES(10,NPROF)	= RSUM(NPROF,6)	= setem	standard error tem
ORES(11,NPROF)	= RSUM(NPROF,7)	= snr	power signal-to-noise (or cts)
ORES(12,NPROF)	= RSUM(NPROF,8)	= jday	Julian day since 1980 (sects)
ORES(13,NPROF)	= RSUM(NPROF,9)	= brt	brightness
ORES(14,NPROF)	= RSUM(NPROF,10)	= sebrt	standard error brt
ORES(15,NPROF)	= RSUM(NPROF,11)	= bkgnd	background
ORES(16,NPROF)	= RSUM(NPROF,12)	= chisqr	χ^2 goodness of fit
ORES(17,NPROF)		= wind	wind
ORES(18,NPROF)		= sewind	standard error wind

There have been slight differences in the values recorded in this results array. In some versions of the FPS analysis programs ORES(12, NPROF) and ORES(13, NPROF) contain the total signal counts and standard error in total signal counts. Also the daytime analysis records the Ring component in kR/pm and the fractional Ring component and standard error in ORES(15, 7, and 8, NPROF) respectively. As there are some redundancies with temperature and profile width containing basically the same information and brightness and intensity containing basically the same information no information is lost with these alternate versions.

The ORES files are output from the PROFILE range of programs. They contain the first 16 values of the ORES array. The FRES files are output from the WINDCAL program and contain all 18 values of the ORES array.

A sample ORES file:

12	19:13:18	0:02:41	WEST	62.535	0.046	4.527	0.128	319.1	18.1	23853.	101.	19.08	0.08	15.90	3.83
14	19:16:57	0:02:41	65270	62.652	0.082	4.295	0.243	287.2	32.5	25164.	196.	20.13	0.16	16.80	1.67
61	22:02:44	0:08:51	ZEN	34.835	0.041	5.282	0.071	434.2	11.7	183763.	481.	45.94	0.12	69.31	35.27
72	22:43:36	0:10:45	MAGSO	67.424	0.082	5.359	0.208	447.1	34.8	18123.	137.	3.62	0.03	15.90	0.98
74	22:59:41	0:17:13	MAGWS	68.739	-0.100	5.300	0.241	437.3	39.7	19061.	169.	2.38	0.02	14.80	2.04
76	23:20:07	0:19:21	ZEN	68.266	0.066	4.273	0.193	284.3	25.6	33604.	209.	3.73	0.02	15.50	2.73

A sample FRES file:

10.	50505.	860.	2.	60.514	0.190	8.771	0.365	534.4	44.4	11978.	191.	2.00	0.03	41.5	0.59	64.4	16.6
10.	51384.	885.	3.	60.196	0.048	9.569	0.083	636.1	11.1	81929.	307.	13.65	0.05	43.3	0.42	7.1	5.0
10.	52286.	905.	4.	61.063	0.141	9.351	0.253	607.4	32.8	17510.	197.	2.92	0.03	42.0	1.18	64.8	12.4
10.	53190.	891.	1.	62.464	0.182	9.153	0.323	582.0	41.0	12509.	182.	2.08	0.03	42.4	0.93	34.0	15.9
10.	54093.	900.	5.	61.042	0.214	9.082	0.489	573.0	61.7	8722.	188.	1.45	0.03	42.6	0.44	5.30	18.4
10.	54995.	890.	2.	61.907	0.197	9.685	0.285	651.6	38.3	16540.	216.	2.76	0.04	42.8	0.92	16.9	17.1
10.	55892.	890.	3.	61.173	0.033	9.648	0.057	646.6	7.6	122640.	314.	20.44	0.05	42.1	1.19	1.70	4.6

When running in automatic mode the sequence number is not incremented as the Mawson FPS required operator alteration of the sequence number thumbwheel. The ORES type file has a slightly different format to the FRES file. NSUM is an integer array, CSUM a character array, and RSUM a real array. The central and elapsed time are saved as hh:mm:ss in the ORES file. These are converted by subroutine THYME to a number of seconds and are stored this way in FRES. The direction is stored as a character in the ORES array, as a coded value in the FRES file where:

1 north
2 east
3 south
4 west
5 zenith
6 non standard or ASLP

are values supplied by the subroutine DCODE.

Other analysis files are as described. The samples files, TSAM, WSAM, and ISAM, produce samples of temperature, wind and intensity in all directions as best interpolated from the data obtained. The samples can be at specified intervals, for example hourly or half-hourly.

6. DIRECTORIES

The files for each day are collected together in a directory for that day. This directory is identified by the day-of-year number, e.g. RES001, RES002, ... RES366. The FPS data is stored in a multilevel directory structure, see Figure 1. The day directories are grouped in years, e.g. RES81, RES92. In year directories there are also three files:

LIST.COM A DCL command procedure which has a line which, given the appropriate symbol definitions, passes through each directory in the year.

LIST.SUM A text file which has a brief overview of the year's observing program followed by a single line description of the data available for each day.

RUN.COM Is a dynamic file used for running automated analysis routines. It can incorporate LIST.COM and a command sequence for each day.

RUN.COM is thus in a state of flux but LIST.COM and LIST.SUM should remain the same. A copy of the summary file, LIST.SUM, for each year is included in Section 7.

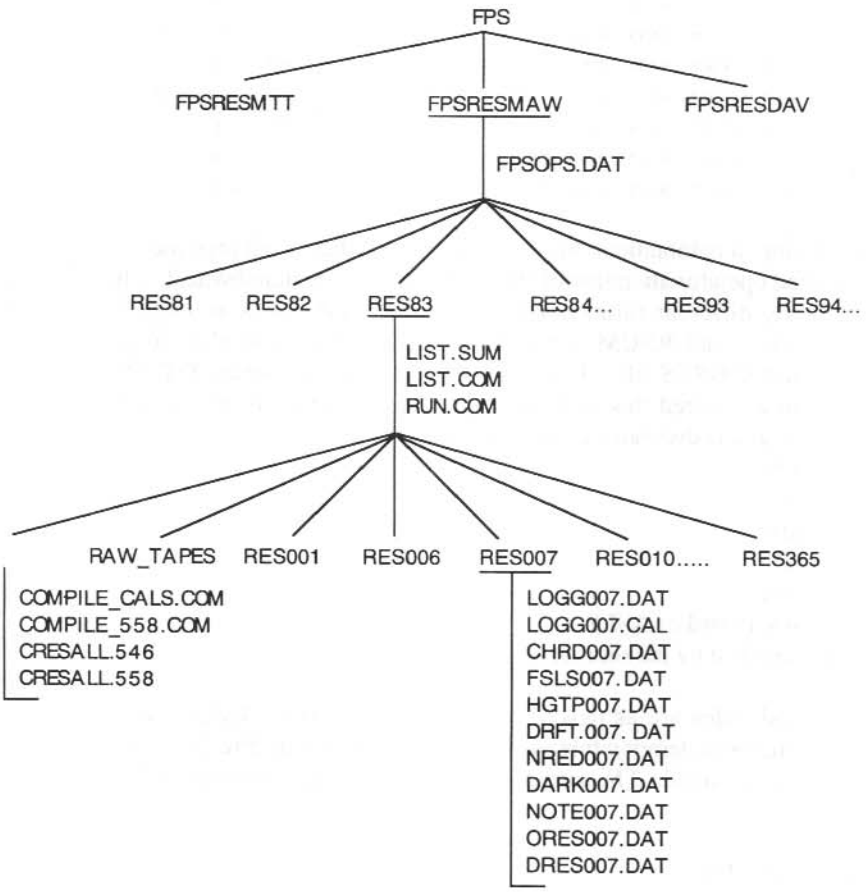

Figure 1. Mawson FPS directory structure.

Another directory AVERAGES is used for compilations of data from a number of days, for example to calculate a yearly average, results files from each day can be appended. In the AVERAGE directory there may be files COMPILE.COM, or similar, to compile data from specified subsets. For example the command

```
$ @COMPILE CRES 546
```

runs the DCL command procedure in COMPILE.COM which looks for a file CRESnnn.546 and appends it to a file CRESALL.546 in the AVERAGES directory, for days nnn spelt out in the command procedure. The files in the AVERAGES directory will vary from year to year depending on the analysis performed to date for that year.

In some years there is another directory RAW_TAPES. This contains the original data records prior to splitting into individual files. When the digideck cassette recorder was replaced with the PC, data files were split up into files in the preliminary editing session which is used to remove spurious high noise points.

The year directories are divided at another level according to location. Three letters are used to indicate the location: FPSRESMAW (for Mawson), FPSRESMTT (for Mt Torrens), FPSRESDAV (for Davis). This publication is only concerned with Mawson data. In some early data analysis schemes, separate directories were used for raw data FPSDATMAW and results FPSRESMAW. In the current data archive both raw data and results are stored in the one directory. This has some disadvantages as care must be exercised not to change raw data. If you wish to alter raw data copy the file and make modifications on a differently named copy so that the raw data is kept intact. For example the raw data in DD2S070.DAT is copied to DD2S070.EDD where sun profiles are interleaved between each sky profile. It was much simpler to have only one directory for each day.

The following command procedure (written by Mark Conde) enables easy movement around the FPS directory structure.

```
$ OWNR = "PENE_GRE" ! Replace with your name.
$ SET DEF ['OWNR'.FPSRESMAW.RES'P1'.RES'P2']
$ IF P1 .EQS. "" THEN SET DEF ['OWNR'.FPSRESMAW]
$ IF P1 .EQS. "" THEN EXIT
$ IF P2 .EQS. "" THEN SET DEF ['OWNR'.FPSRESMAW.RES'P1']
$ IF P2 .EQS. "AVG" THEN SET DEF['OWNR'.FPSRESMAW.RES'P1'.AVERAGES]
```

Defining a DCL symbol MAW to run this program will allow the command

```
$ maw 90 200
```

to make the default directory to be that for day 200 in 1990. The averages directory can be reached by

```
$ maw 90 avg
```

the top-level year directory, containing the list files, by

```
$ maw 90
```

and the location directory, in this case [PENE_GRE.FPSRESMAW], by just

```
$ maw
```

Global OPTN files, FPSOPS.DAT, are stored at this level. Similar command procedures can be set up for other locations.

7. SUMMARY FILES

The following summary files have been compiled in a format derived from that used by John Innis for his 1993 annual report. They are designed as a summary of the information available. A preamble summarises the year's observing programs. This is followed with a line for each day profiles were recorded. For each day of year the date and type of observations or calibrations are recorded. The duration of observations UT is given in column 3. Column 4 contains the wavelength being observed. Column 5 indicates D, N, or T for daytime, night-time, or twilight observations. Daytime observations are always dual-etalon, night-time single-etalon. Twilight observations are usually single etalon but in some cases are dual etalon observations. Such details are indicated in the preamble. Column 6 gives C, Z, M, or A for cardinal, zenith, magnetic cardinal point observations, or auroral observations. In 1984 Mark Conde used the auroral theodolite to step through auroral arcs in fine steps. For days where more than one type of observation is made some combination is given to provide all the relevant details. The last column is used for comments. In later years comments are more complete. In early years the comments are limited to notes made while compiling the archive.

I have tried to indicate from where information was obtained. These files should be used as the first source of information. When looking in detail at individual data sets more complete comments made by the observer can be obtained from the log books and in later years log books are supplemented with NOTE files. Log books are written while the observations are being made. NOTE files are written when the data has been transferred to the Vax computer which may be one day, several days, and in some cases several years later. Copies of the log books are held on the stations and originals have been filed in the ASP archive at the Australian Antarctic Division, Kingston, Tasmania.

7.1 Mawson FPS 1981 Observing Log Summary

Observations by Norm Jones. All night-time observations in 1981. Mostly of oxygen λ630 nm line but two short campaigns on oxygen λ558 nm line in late spring. One night on OH λ732 nm line. A total of 49 nights of λ630 nm data and 13 nights of λ558 nm data.

This was the first year data was collected. The frequency of zenith observations varied considerably. Some nights were all zenith observations and on other nights no or only one zenith observation was done. This is noted.

When the instrument was left running automatically observations in one direction only were made and NO DRIFT measurements were done. Generally the direction of observations was in the zenith. At most only one calibration !!!

Some days a block of 3 or 4 hours zenith observations were followed by 3 or 4 hours cardinal point observations. The data have been analysed in two blocks. Raw profiles are in NRED and ZRED, results in ORESnnn.NIT and ZRESnnn.NIT respectively.

There are also TRED files for twilight data.

Observation times were compiled from results files. Norm's last analysis is stored in DRESnnn.NIT and ORESnnn.NIT files. The green data were reanalysed in 1994.

February

D052	21/02/81 1925-2112 630 N	C 256 channels	
D053	22/02/81 1850-2240 630 NT	C 256 channels,	S W and only 1 Z
D054	23/02/81 1750-2245 630 N Z	C 256 channels,	S W and only 1 Z
D055	24/02/81 1820-2315 630 N	C 256 channels,	S W and only 1 Z
D056	26/02/81 1655-2225 630 N	C 256 channels	
D057	27/02/81 2005-2240 630 N	C 256 channels	

March

April

D111	21/04/81	drift only	
D112	22/04/81 1610-1810 630 N	C 256 channels	
D113	23/04/81	drift only	
D117	27/04/81 1350-2110 630 N	C 256 channels	
D118	28/04/81	drift only	

May

June

D175	24/06/81	drift only	
D178	27/06/81 1410-2045 630 N	C 256 channels	
D179	28/06/81 1545-2615 630 N	C 256 channels, only 1 Z	
D180	29/06/81 1920-2540 630 N	C 256 channels, only 1 Z	
D181	30/06/81 1315-1905 630 N	C 256 channels, only 1 Z	

July

D182	01/07/81 1435-2615 630 N	Z	256 channels, only 1 Z
D183	02/07/81 1640-2640 630 N	C	256 channels
D184	03/07/81 1605-2514 630 N	C	256 channels, only 1 Z
D185	04/07/81 1900-2600 630 N	C	256 channels, not routine Z
D1850	!special directory as DOY185 at 2 orders		
D186	05/07/81 1445-2150 630 N	C	256 channels, not routine Z
D187	06/07/81 1456-2300 630 N	Z	256 channels, 1 NSEW at start
D188	07/07/81 1600-2535 630 N	C	256 channels, only 1 Z
D189	08/07/81 1535-2550 630 N	C	256 channels, only 1 Z
D190	09/07/81 1845-2515 630 N	C	256 channels
D192	11/07/81 1425-1825 630 N	C	256 channels
D201	21/07/81		drift only
D203	23/07/81 1210-2025 630 N	C	256 channels, routine Z
D204	24/07/81 1315-2335 630 N	CZ	256 channels, routine Z and blocks of Z
D205	25/07/81 1145-2340 630 N	CZ	256 channels
D208	27/07/81 1345-2400 630 N	CZ	256 channels, North and Z only

August

D213	01/08/81 1400-2615 630 N Z	C	256 channels
D214	02/08/81 1435-1845 630 N	C	256 channels
D215	03/08/81 1210-2600 630 N Z	C	128 channels
D217	05/08/81 1210-1730 630 N	Z	128 channels ! NO DRIFT
D218	06/08/81 2035-2735 630 N	Z	128 channels ! NO DRIFT
D219	07/08/81 1230-2740 630 N Z	C	128 channels
D220	08/08/81 1230-2730 630 N Z	C	128 channels
D221	09/08/81 1430-2110 630 N	C	128 channels
D222	10/08/81 1310-2710 630 N	Z	128 channels
D223	11/08/81 1505-2720 630 N	Z	128 channels ! NO DRIFT
D224	12/08/81 1725-2730 630 N	C	128 channels
D225	13/08/81		drift only
D231	19/08/81 1600-1705 630 N	N	NO DRIFT, 128 channels, only North obs.
D234	22/08/81		drift only
D237	25/08/81		drift only
D238	26/08/81 1455-2120 630 N	Z	128 channels

September

D246	03/09/81 1515-2340 630 N	C	128 channels
D247	04/09/81 1645-2245 630 N Z	C	128 channels, 3 hours Z then C
D260	17/09/81		drift only
D261	18/09/81 1525-2015 558 N	C	128 channels
D262	19/09/81 1430-2355 558 N	C	128 channels
D263	20/09/81 1650-2235 558 N	Z	128 channels ! NO DRIFT
D264	21/09/81 1500-2430 558 NC	Z	128 channels, some blocks Z
D265	22/09/81 1455-2430 558 N	C	128 channels
D267	24/09/81 1620-2430 558 N	CZ	128 channels, some blocks Z
D268	25/09/81 1505-2420 558 N	C	128 channels
D269	26/09/81 1550-2315 558 N	C	128 channels

D271 28/09/81 1610-1850 630 N C 128 channels
D1271 !732 nm obs. in special directory
D273 30/09/81 1710-2410 630 N C 128 channels, some blocks Z

October

D275 02/10/81 1800-2400 630 N CZ 128 channels, blocks of Z but not through C
D276 03/10/81 1540-2320 630 N Z 128 channels !NO DRIFT
D277 04/10/81 1545-2355 630 N Z 128 channels !NO DRIFT
D278 05/10/81 1540-2345 630 N C 128 channels
D279 06/10/81 1540-2325 630 N C 128 channels
D280 07/10/81 1545-1860 630 N Z 128 channels !NO DRIFT
D281 08/10/81 1610-2320 558 N Z Some drift, probably not enough for winds!!!
D286 13/10/81 1840-2130 558 N C 128 channels
D293 20/10/81 1745-2215 558 N C 128 channels
D294 21/10/81 1645-2225 558 N C 128 channels
D296 23/10/81 1700-1915 558 N C 128 channels

7.2 Mawson FPS 1982 Observing Log Summary

Observations by Norm Jones. Only through to end of summer. A total of 13 days λ630 nm data, in DRED and TRED files and 4 days of λ558 nm data in TGRN and DGRN files.

Analysis by Mark Conde produces DSUB subtraction features. Results files from Mark's analysis, various types, ORESnnn.DAY, .TWI, .DAT, FRES and DRES files are saved, results from previous analysis deleted.

January

D018	18/01/82					PREL files, not sure what they are
D020	20/01/82					PREL files, not sure what they are
D022	22/01/82					PREL files, not sure what they are
D025	25/01/82	2040-2140	630	T	C	3 profiles
D026	26/01/82	1000-2300	630	DT	C	
D027	27/01/82	2018-2800	630	DT	C	
D028	28/01/82	2018-1100	630	DT	C	
D029	29/01/82	1030-2300	630	DT	C	
D030	30/01/82					

February

D032	01/02/82	0920-2330	630	DT	C	
D033	02/02/82	0930-4700	630	DT	C	
D034	03/02/82		630	DT	C	1 profile only
D038	07/02/82	1815-2400	630	DT	C	
D039	08/02/82	0000-1830	630	DT	C	
D040	09/02/82	2045-2400	630	DT	C)	
D041	10/02/82	0000-2400	630	DT	C)	over 36 consecutive hours
D042	11/02/82	0000-0610	630	DT	C)	
D047	16/02/82		558	T	C	two useful twilight GREEN profiles
D048	17/02/82		558	D	C	3 profiles
D049	18/02/82		558	T	C	one twilight GREEN profile
D050	19/02/82	0100-1600	558	D	C	
D051	20/02/82					calibrations, no obs.
D054	23/02/82					calibrations, no obs.
D056	25/02/82					calibrations, no obs.
D057	26/02/82					calibrations, no obs.

7.3 Mawson FPS 1983 Observing Log Summary

Observations by Paul Wardill. Day and night-time observations, raw data in DRED, TRED, and NRED files. Daytimes results in ORESnnn.DAY, night-time results in ORESnnn.NIT, and for a few days combined results in ORESnnn.ALL. There are 41 days with daytime red observations, 9 days with twilight red observations, and 57 days with night red observations. Of the 57 nights 7 had high time resolution zenith observations with, if any, only cardinal point observations every 1.5 hours. All the remaining data were normal cardinal point observations.

Paul had a separate INSPROF directory in his account. There were HGnnn.DAT and FTINnnn.DAT profiles for the following days in that directory: 011, 177, 195, 260, 266, 296, 311 and 328. These files have been integrated into the standard directory structure.

Original data structure has been compressed so all data are in the standard form. This information has been compiled from results files and may not be fully complete. On some days no analysis had been performed.

January

D005	05/01/83 0300-1230 630 D	C	
D006	06/01/83 0430-0930 630 D	C	S and E only
D008	08/01/83 0630-1430 630 D	C	S and E only
D010	10/01/83 0500-1600 630 D	C	
D011	11/01/83 0520-1520 630 D	C	S and E only, Hg profile
D017	17/01/83 0845-1400 630 D	C	
D022	22/01/83 0250-2135 630 DT	C	twilight 3h, 8h gap between D and T
D023	23/01/83 0300-1030 630 D	C	
D028	28/01/83 0350-2030 630 DT	C	no gap
D031	31/01/83 1300-1905 630 DT	C	

February

D033	02/02/83 0940-2215 630 DT	C	
D038	07/02/83 0215-2235 630 DT	CZ	twilight profiles 4h zenith
D039	08/02/83 0730-2245 630 DT	C	
D040	09/02/83 0100-2240 620 D	C	6h gap between D and T but no raw T data
D049	18/02/83 0850-1330 630 D	C	
D051	20/02/83 1040-2400 630 DT	C	
D052	21/02/83 0140-1325 630 D	C	

March

D069	10/03/83 1525-2420 630 DN	C	time period not including D obs.
D071	12/03/83 1815-2425 630 N	C	
D073	14/03/83 1605-2440 630 N	C	
D075	16/03/83 1515-2105 630 N	C	
D077	18/03/83 1510-2455 630 N	C	
D080	21/03/83 1800-2455 630 N	C	
D081	22/03/83 0345-0935 630 D	C	
D084	25/03/83 0400-1130 630 D	C	

D086	27/03/83	0540-1950	630	DN	C	
April						
D101	11/04/83	0600-1810	630	DN	C	3h gap D and N
D102	12/04/83		630	D		no analysis done
D103	13/04/83	1745-2500	630	N	Z	5 min profiles
D104	14/04/83	1450-1920	630	N	Z	5 min profiles
D116	26/04/83	1400-2550	630	N	C	
D117	27/04/83	1400-2445	630	N	C	
D118	28/04/83	1400-2450	630	N	C	
D119	29/04/83	1345-2450	630	N	C	
May						
D122	02/05/83	1420-2155	630	N	C	
D137	17/05/83	1415-2400	630	N	C	
D138	18/05/83	1140-2345	630	N	C	
D140	20/05/83	1345-2400	630	N	C	
D142	22/05/83	1100-2300	630	N	C	
D144	24/05/83	1355-2400	630	N	Z	3 lots of C interspersed in 5 min Z
D146	26/05/83	1700-2500	630	N	C	
D147	27/05/83	1115-2330	630	N	C	
D150	30/05/83	1050-1840	630	N	C	
June						
D153	02/06/83	1100-1520	630	N	C	
D154	03/06/83	1035-1510	630	N	C	
D156	05/06/83	1100-2110	630	N	C	
D157	06/06/83	1030-1725	630	N	C	
D159	08/06/83	1050-2500	630	N	C	
D160	09/06/83	1045-2300	630	N	C	
D163	12/06/83	1515-2315	630	N	C	
D164	13/06/83	1140-1545	630	N	C	
D165	14/06/83	1345-2550	630	N	C	
D166	15/06/83	1510-2550	630	N	C	
D167	16/06/83	1415-2610	630	N	C	
D168	17/06/83	1505-2600	630	N	C	
D174	23/06/83	1035-1715	630	N	C	
D175	24/06/83	1020-1640	630	N	C	
D177	26/06/83	1100-1630	630	N	C	Hg profile
July						
D184	03/07/83	1200-2040	630	N	C	
D185	04/07/83	2040-2350	630	N	C	
D186	05/07/83	1245-1535	630	N	C	
D194	13/07/83	1210-1855	630	N	C	
D195	14/07/83	1210-2235	630	N	C	Hg profile
D196	15/07/83	1150-2320	630	N	C	
D198	17/07/83	1635-1850	630	N	C	

D200	19/07/83	1125-2550 630 N	C	
D201	20/07/83	1120-2310 630 N	Z	occasional C, 5 minute Z

August

September

D260	17/09/83	1420-2250 630 N	C	Hg profile
D261	18/09/83	1405-2230 630 N	C	
D262	19/09/83	1400-2420 630 N	Z	occasional C, 5 minute Z
D263	20/09/83	1405-2350 630 N	Z	occasional C, 5 minute Z
D265	22/09/83	1425-2350 630 N	C	
D266	23/09/83	1445-2030 630 N	C	Hg profile

October

D279	06/10/83	0200-0740 630 D	C	
D280	07/10/83	0510-1440 630 D	C	
D281	08/10/83	0450-1440 630 DT	C	
D282	09/10/83	0550-1415 630 DT	C	
D291	18/10/83	1645-2115 630 N	C	
D292	19/10/83	1635-2210 630 N	C	
D293	20/10/83	1100-2240 630 DN	C	
D296	23/10/83	1630-2225 630 DN	C	D not analysed, Hg profile

November

D309	05/11/83	0530-1400 630 D	C	
D310	06/11/83	0730-1545 630 D	C	
D311	07/11/83			only 1 Hg profile
D316	12/11/83	0700-1400 630 D	C	
D320	16/11/83	0345-1600 630 D	C	
D321	17/11/83	0100-0800 630 D	C	
D323	19/11/83	0300-1300 630 D	C	
D327	23/11/83	0815-1600 630 D	C	
D328	24/11/83	0400-0800 630 D	C	Hg profile

December

D335	01/12/83	0345-1630 630 D	C	
D337	03/12/83	0530-1300 630 D	C	
D343	09/12/83	0400-1000 630 D	C	
D355	21/12/83	630 D	C	not analysed

7.4 Mawson FPS 1984 Observing Log Summary

Observations by Mark Conde. A number of observing campaigns were carried out during this year. Daytime observations at λ630 nm are available for 23 days. Daytime observations at λ558 nm were attempted on 6 days. Night-time observations of both λ630 and λ558 nm emissions were made. There were two observing modes: in the magnetic cardinal points and auroral observations. An A in column 6 stands for auroral observations. On these nights observations were made stepping through auroral bands at small intervals, with reference to an auroral theodolite. When no aurora were present observations were made in the magnetic cardinal points.

Through June and July most observations were of λ558 nm however at least one round of λ630 nm, with observations in each cardinal point and in the zenith, were made.

Green observations were usually made with field stop 1 (3.0 mm), red with field stop 2 (4.5 mm). Need to take care when calculating instrument profiles from mercury drift that only those at the appropriate field stop are used. Will divide DRFT files into .558 and .630 for different field stops. Prior to DOY 137 drift was monitored using a neon lamp. A mercury lamp was used for calibrations after the order was changed on DOY137.

Daytime 630 nm observations on DOYs 039, 040, 046, 050, 053, 055, 060, 076, 077, 078, 086, 096, 102, 107, 293, 297, 351, 352, 354, 363 and 364 were analysed by Mark Conde and results files on those days contain his analysis.

Raw tapes split up referring to log book in 1994. The days above have, where possible, been resplit as night-time data were not kept. There were a few tapes missing from the backup of raw tapes: 10 tapes from ET080.DAT to ET089.DAT. Also ET093.DAT and ET075.DAT. This explains the big data gap in November and December.

Mark notes that data obtained prior to the prism alignment, D258, are suffering from the plates being held slightly off parallel. The temperatures obtained from this data should be considered cautiously. Winds should be more reliable.

February

D038 07/02/84 1602-2144 630 DN	C N	from 1828-2144 45 deg. zenith angle
D039 08/02/84 0853-2015 630 DN	C N	from 1926-2015
D040 09/02/84 1029-2019 630 DN	C N	from 1823-2019
D041 10/02/84 1755-2018 630 N	C	
D046 15/02/84 0648-1119 630 D	C	
D048 17/02/84 0530-2105 630 DN	C N	from 1803-2105
D050 19/02/84 0617-2016 630 DN	C N	from 1813-2016
D053 22/02/84 0124-0832 630 D	C	
D055 24/02/84 0438-1952 630 DN	M N	from 1726-1952
D058 27/02/84 1856-2202 630 N	M	
D060 29/02/84 1522-2157 630 DN	M N	from 1728-2157

March

D069 09/03/84 0547-1907 630 DN	M N	from 1744-1907
D070 10/03/84 0650-1205 630 D	M	
D072 12/03/84 1705-2207 630 N	A	
D076 16/03/84 0552-1113 630 D	M	terminated by cloud
D077 17/03/84 1040-1500 630 DN	MA	N from 1749-2200
D078 18/03/84 0827-1553 630 DN	MA	N from 1721-2140
D080 26/03/84 1715-0006 630 N	MA	
D084 26/03/84 1923-2227 630 N	A	obs. terminated by some cloud
D086 26/03/84 0539-1613 630 DN	MA	N from 1730-2340
D088 26/03/84 1739-2215 630 N	AM	haze and high cloud terminated obs.
D089 26/03/84 1758-2335 630 N	AM	trial 558 N M from 2352-0003, 6 profiles
D090 26/03/84 1859-2315 630 N	AM	bright aurora

April

D096 05/04/84 0731-1202 630 D	M	soon became cloudy
D098 07/04/84 1729-2244 630 N	A	
D101 10/04/84 1739-2240 630 N	MA	some high cloud, 1 profile 558
D102 11/04/84 1845-2410 630 N	A	active aurora
D103 11/04/84 1716-2401 630 N	ZM	Z fixing theodolite, bright auroral substorm
D104 11/04/84 1757-2100 630 N	M	got very cloudy very quickly at end of obs.
D107 16/04/84 1736-2042 630 DN	M	D from 0633-1250
D108 17/04/84 1801-2441 630 N	M	virtually no aurora, a good nights obs.
D109 18/04/84 1913-2210 630 N	M	very windy, ground drift, otherwise clear
D113 22/04/84 1731-2042 630 N	M	
D114 23/04/84 1951-2343 630 N	AM	1 profile 558
D116 25/04/84 1818-2100 630 N	AM	558 from 2045-2105, ended cloudy
D119 28/04/84		calibrations only, weather bad
D121 29/04/84 1724-2035 630 N	AM	obs. terminated by cloud

May

D122 01/05/84 1643-2330 630 N	AM	obs. at 30, 45 and 60 OZA, 1 round 558
D123 02/05/84 1738-2430 630 N	M	obs. at 30, 45 and 60 OZA
D126 05/05/84 1655-2102 630 N	AM	
D128 07/05/84 1706-2404 630 N	M	obs. at 30, 45 and 60 OZA
D129 08/05/84 2007-2242 630 N	M	obs. at 30, 45 and 60 OZA, close up for blizz
D130 09/05/84 1838-2536 630 N	M	30 OZA, nice aurora
D136 15/05/84 1814-1829 558 N	C	trial 558, 630 and cals, sa 1 and 2, cloudy
D137 16/05/84		order from 11475 ±5, t = 3.614 mm to t = 6.97 mm
D142 21/05/84 1945-2230 630 N	M	558 alternating with 630
D143 22/05/84 1740-2400 558 N	AM	1 round 630, 2230-2326
D144 23/05/84 1842-2318 558 N	M	1 profile 630
D145 24/05/84 1937-2327 558 N	AM	no 630
D151 30/05/84 1843-2408 558 N	M	order change, 30 and 60 OZA, 1 round 630
D152 31/05/84 1827-2342 558 N	M	no 630

June

D153 01/06/84 1904-2223 558 N		M	30 OZA, plus 1 round of 630 2226-2400
D166 14/06/84 1704-2306 558 N		M	terminated by cloud
D168 16/06/84	558 N	M	trial 558 and 630, Hg at varying fs
D169 17/06/84 1829-2217 558 N		M	alternate 630 M rounds, ended by clouds
D170 18/06/84 1636-2401 558 N		M	alternate 630 M rounds
D171 19/06/84 1921-2058 558 N		M	630 2103-2302, some clouds at end
D178 26/06/84 1754-1914 558 N		M	mostly cals, cloudy
D179 27/06/84 1748-2021 558 N		M	
D180 28/06/84 1624-2241 558 N		M	

July

D183 01/07/84 1806-2443 558 N	M	30 OZA
D184 02/07/84 1645-2404 558 N	MA	1 630 profile
D185 03/07/84 1717-2307 558 N	MA	changed order at start, auroral substorm
D186 04/07/84 1752-2156 558 N	M	1 630 M round, ended 8/8 cloud
D193 11/07/84 1838-2200 558 N	CM	included oxygen lamp obs. at 558, 630, 732 nm
D194 12/07/84 1816-2242 558 N	M	
D198 16/07/84 1630-2240 558 N	M	alternate 630 rounds
D199 17/07/84 1622-2456 558 N	AM	60 OZA, 2 630 rounds
D200 18/07/84 1738-2206 558 N	AM	ended by clouds
D201 19/07/84 1650-2400 558 N	M	2 rounds 630
D202 20/07/84 1631-2347 558 N	M	very little auroral activity
D204 22/07/84 1651-2400 558 N	M	1 630 round
D205 23/07/84 1638-2247 558 N	AM	one round 630
D209 27/07/84 1738-2316 558 N	AM	2 630 profiles, auroral substorms
D211 29/07/84 1736-2351 558 N	AM	very active substorm
D212 30/07/84 1640-1933 558 N	M	obs. terminated by cloud

August

D216 03/08/84 1732-1851 558 N	M	obs. terminated by cloud
D227 14/08/84		calibrations only: Hg, laser, Neon
D228 15/08/84		calibrations only Hg

September

D258 14/09/84	no data, note intervening period prism alignment and re-assembly
D263 19/09/84	finesse measurements
D265 21/09/84	finesse measurements
D266 22/09/84	finesse measurements
D267 23/09/84	finesse measurements

October

D275 01/10/84			finesse measurements
D277 03/10/84 2055-2324 630 N		M	looked at 732 but no signal
D278 04/10/84 1742-2352 630 N		M	active aurora
D282 08/10/84	alignment of X parallelism calibrations		
D286 12/10/84	order change t = 6.95 mm, cals + single 630 and 558 profiles		
D287 13/10/84 1754-2717 558 DN		AM N 1754-2221, short bright substorm	

D288 14/10/84 1932-2830 558 ND	M N	1932-
D289 15/10/84 1126-2153 558 DN	M N	1658-2153, active aurora, 1 tape 'lost'
D290 16/10/84 1841-2300 558 N	M	some cloud
D291 17/10/84 1838-1848 558	M	aborted by snow and wind
D292 18/10/84	absolute intensity calibrations, sample 558 and 630 profiles	
D293 19/10/84 1719-2235 558 DN	M	some aurora
D294 20/10/84 1733-2204 558 N	M	some cloud
D297 23/10/84 0759-1530 558 D	M	

November

December

D351 16/12/84 0929-1731 630 D	M	This day's data analysed
D352 17/12/84 0615-1401 630 D	M	
D354 19/12/84 0508-1830 630 D	M	
D363 28/12/84 0812-1051 630 D	M	
D364 29/12/84 0509-1930 630 D	M	
D366 31/12/84 0527-1340 630 D	M	ended cloudy

7.5 Mawson FPS 1985 Observing Log Summary

Observations at start of year oxygen λ630 nm: dual-etalon daytime observations DOYs 003–049 and DOYs 050–063 automatic single-etalon night-time (mostly) zenith observations in an automatic mode. These observations, 11 days of daytime λ630 nm and 9 nights of zenith λ630 nm, by Mark Conde. Except for DOYs 32, 33, and 49 daytime data, this data was split into files 10/94 PG.

Observations D258–290 by Gina Price. All observations high time resolution zenith oxygen λ558 nm emission. Data were obtained on 14 nights. Files called ZGRN. Log details compiled from results files. Green data reanalysed in 1994. PG

January

D003 03/01/85 0858-1734 630 D M
D004 04/01/85 0457-1802 630 D M
D007 07/01/85 0846-1144 630 D M ended with some cloud and Elwood's rescue
D009 09/01/85 1040-1731 630 D M
D010 10/01/85 0457-0814 630 D M closed up cloudy
D030 30/01/85 0623-1220 630 D M closed up cloudy
D031 31/01/85 0751-0901 630 D M view switch problems

February

D032 01/02/85 0356-1322 630 D C
D033 02/02/85 0355-1406 630 D C
D042 11/02/85 1855-2126 630 N M some instrument problems
D049 18/02/85 0646-1232 630 D C
D050 19/02/85 1753-1922 630 N Z aborted by increasing cloud and nastiness
D051 20/02/85 1737-2237 630 N Z
D052 21/02/85 1756-2321 630 N Z
D053 22/02/85 1828-2315 630 N Z
D055 24/02/85 1800-2320 630 N Z
D056 25/02/85 1743-2321 630 N Z
D057 26/02/85 1801-2314 630 N Z
D058 27/02/85 1744-2002 630 N Z lost parallelism after a while

March

D063 04/03/85 1816-1936 630 N Z 558 1857-2000 last obs. and cals for MC

September

D258 15/09/85 only has calibrations
D265 22/09/85 1715-2245 558 N Z
D268 25/09/85 1625-2230 558 N Z

October

D277 04/10/85 1720-2310 558 N Z
D278 05/10/85 1650-2210 558 N Z
D279 06/10/85 1655-2335 558 N Z

D280 07/10/85 1605-2320 558 N Z
D281 08/10/85 1640-2310 558 N Z
D284 11/10/85 1650-2310 558 N Z
D285 12/10/85 1650-2310 558 N Z
D286 13/10/85 1700-2300 558 N Z
D287 14/10/85 1645-2300 558 N Z
D288 15/10/85 1620-2310 558 N Z
D289 16/10/85 1730-2250 558 N Z
D290 17/10/85 1735-2220 558 N Z

7.6 Mawson FPS 1986 Observing Log Summary

Observations by Mark Conde. Data on days marked * analysed by Mark. This summary from results files. Observations are basically of day and night-time oxygen λ630 nm emission in MAGNETIC cardinal points (unless otherwise specified). Some days when have full 24 hour coverage by combining dual and single etalon observations.

Days 13, 83, 84, 86, 87, 104 splitup in 1995. Days other than those marked by * have had no analysis at this stage.

January

D013 13/01/86		calibrations only, no obs.
D014 14/01/86 0330-1800 630 D	M *	
D015 15/01/86 0730-1000 630 D	M *	only 2 profiles
D016 16/01/86 0315-0830 630 D	M *	4 profiles
D017 17/01/86 1000-1530 630 D	M *	4 profiles

February

March

D083 24/03/86 1631-1852 630 N	M	only 2 hours data
D084 25/03/86 1927-2513 630 N	M	full moon, periscope problems
D086 27/03/86 1603-2502 630 N	M	OK all night
D087 28/03/86 1501-1851 630 N	M	
D089 30/03/86 1600-2600 630 N	M *	sky clear after blizz

April

D092 02/04/86 1700-2600 630 N	M *	clear sky
D095 05/04/86 1740-2600 630 N	M *	clear except for thin high cloud
D101 11/04/86 1500-2620 630 N	M *	1 step & rest probe before obs., clear sky
D102 12/04/86 1640-2630 630 N	M *	10-15 deg periscope error at end of windy night
D104 14/04/86 1500-2515 630 N	M	
D105 15/04/86 1729-2603 630 N	M	
D111 21/04/86 1408-0053 630 N	M	good run
D112 22/04/86 1520-2534 630 N	M	good run
D113 23/04/86 1740-2548 630 N	M	good run
D114 24/04/86 1425-2356 630 N	M	good run
D115 25/04/86 1416-2332 630 N	M	good run
D117 27/04/86 1731-2702 630 N	M	good run

May

D127 07/05/86 1808-2800 630 N	M *	only 7 profiles, big gap in middle
D128 08/05/86 1350-2800 630 ND	M *	only 1 day profile, sky clear
D129 09/05/86 0500-2745 630 DN	M *	
D130 10/05/86 1220-2710 630 N	M *	some cloud mostly in east

June

July

August
D237 25/08/86 1435-2651 630 N M
D243 31/08/86 1417-2147 630 N M

September
D263 20/09/86 1920-2515 630 N M *
D264 21/09/86 1515-2505 630 N M *
D265 22/09/86 1545-2500 630 N M *
D266 23/09/86 0250-2500 630 DN M *
D269 26/09/86 0530-2435 630 DN M * couple hours gap between D and N
D270 27/09/86 0200-2640 630 DN M * couple hours gap between D and N

7.7 Mawson FPS 1988 Observing Log Summary

Observations by Mark Conde and Pene Greet. All daytime oxygen λ630 nm observations in cardinal points. Analysed by Mark Conde. This summary compiled from results files.

November

D329 24/11/88 1150–1223	drift only, no analysis
D330 25/11/88 1627–2700	drift only, 10 minute profiles
D332 27/11/88 0655–1424	drift only, 20 and 10 minute profiles
D334 29/11/88 0613–1253	drift only, 10 min and 30 sec profiles

December

D336 01/12/88 0730–1300 630 D C	
D337 02/12/88 0025–1800 630 D C	
D338 03/12/88 0300–1510 630 D C	
D339 04/12/88 2250–2400 630 D C	26 hours data
D340 05/12/88 0000–2400 630 D C	
D341 06/12/88 0000–2400 630 D C	
D342 07/12/88 0000–2400 630 D C	
D343 08/12/88 0000–0800 630 D C	
D353 18/12/88 1015–1200 630 D C	only 2 profiles
D354 19/12/88 0250–1740 630 D C	
D356 21/12/88 1200–2420 630 D C	
D357 22/12/88 0020–2400 630 D C	
D358 23/12/88 0000–0940 630 D C	
D363 29/12/88	order measurement

7.8 Mawson FPS 1989 Observing Log Summary

Summer program run by Pene Greet and Mark Conde, winter by John French. Summer observations of mesospheric D2 sodium, daytime and some twilight towards end of summer. Winter observing program, some daytime sodium but mostly twilight sodium and automatic night-time oxygen green. Problems with large drift in λ558 nm night-time observations.

The total time interval is given in column 3. The time following the λ589 nm observations gives the duration of the λ558 nm observations. The last two time intervals apply to the dawn and dusk λ589 nm observations.

January

D001 01/01/89			calibrations only
D002 02/01/89			calibrations only
D003 03/01/89			calibrations only
D004 04/01/89	0502-1519 589 D	C	D1 and D2 daytime profiles, not analysed
D005 05/01/89			calibrations only
D006 06/01/89			calibrations only
D007 07/01/89			calibrations only
D008 08/01/89	1633-1739 589 D	C	
D010 10/01/89	589 D	C	not analysed
D011 11/01/89	0150-2400 589 D	C	
D012 12/01/89	0200-2400 589 D	C	
D013 13/01/89	0000-1220 589 D	C	
D014 14/01/89	0330-2500 589 D	C	
D015 15/01/89	0120-2400 589 D	C	
D016 16/01/89	0000-0220 589 D	C	not analysed
D018 18/01/89	1500-2400 589 D	C	
D019 19/01/89	0000-2400 589 D	C	
D020 20/01/89	2000-2500 589 D	C	
D021 21/01/89	0030-1210 589 D	C	
D023 23/01/89			linearity tests
D024 24/01/89			linearity tests
D025 25/01/89			linearity tests
D026 26/01/89			linearity tests

February

D032 01/02/89	0520-2400 589 D	C	
D033 02/02/89	0000-2400 589 D	C	
D037 06/02/89	2100-2400 589 D	C	mostly twilight
D038 07/02/89	0030-0540 589 D	C	
D041 10/02/89	0050-0520 589 D	C	
D042 11/02/89	1710-0040 589 D	C	
D043 12/02/89	0120-2400 589 D	C	day and twilight dual etalon obs.
D044 13/02/89	1430-2450 589 DT	C	dual daytime and single etalon twilight
D045 14/02/89	0300-1045 589 D	C	
D047 16/02/89	0930-1200 589 D	C	only 2 profiles

D048 17/02/89 0320-1600 589 D C
D053 22/02/89 1400-2450 589 DT C
D054 23/02/89 0100-2400 589 DT C
D055 24/02/89 0200-1920 589 DT C
D057 26/02/89 1010-2400 589 DT C
D058 27/02/89 0400-0840 589 D C
D059 28/02/89 1520-1700 589 D C

March
D060 01/03/89 0615-1410 589 D C
D061 02/03/89 1500-1700 589 D C
D062 03/03/89 1120-1720 589 D C
D063 04/03/89 0540-0000 589 DT C
D067 08/03/89 1700-2440 589 T C
D068 09/03/89 0210-1720 589 D C
D072 13/03/89 0300-1630 589 D C
D074 15/03/89 1320-2500 589 DT C +630 N C
D075 16/03/89 0120-1010 589 D C
D076 17/03/89 0300-2505 589 DT C +630 N C T not analysed
D077 18/03/89 0200-0440 589 D C
D079 20/03/89 0500-1610 589 DT C twilight not analysed
D080 21/03/89 2357-0800 589 DT C twilight not analysed
D082 23/03/89 calibrations

April
D094 04/04/89 1850-2512 630 N C not analysed
D097 07/04/89 0525-1127 589 D C +1550-2600 630 N C
D098 08/04/89 0216-0235 589 D C +1741-2546 630 N C T both dusk and dawn
D099 09/04/89 0650-1510 589 DT C + 630 N C
D100 10/04/89 0152-1144 589 D C +1540-2610 558 N C
D101 11/04/89 0240-1010 589 D C +1525-2545 558 N C
D102 12/04/89 0223-0842 589 D C
D106 16/04/89 0848-1045 589 D C +1350-2425 558 N C
D107 17/04/89 0220-0302 589 T C
D108 18/04/89 0616-1005 589 D C +1420-1810 558 N C
D109 19/04/89 1835-1951 589 T C +1650-1940 558 N C
D110 20/04/89 0540-0743 589 D C
D112 22/04/89 0734-0827 589 D C

May

June
D176 25/06/89 1725-2700 558 N C

July

D183 02/07/89 1350-2840 558 N C
D184 03/07/89 0448-0607 589 T C +1300-2730 558 N C
D185 04/07/89 0336-1215 589 T C +1240-2800 558 N C, T 0336-0522, 1040-1215
D186 05/07/89 0524-1218 589 T C +1240-2830 558 N C, T 0524-0602, 0928-1218
D187 06/07/89 0441-0600 589 T C
D189 08/07/89 0350-1201 589 T C +1220-2850 558 N C, T 0350-1201
D190 09/07/89 0457-0558 589 T C +1610-2800 558 N C
D191 10/07/89 0405-1203 589 T C +1220-2830 558 N C, T 0405-0603, 1020-1203
D192 11/07/89 0435-1133 589 T C +1420-2800 558 N C, T 0435-0551, 1002-1133
D193 12/07/89 1028-1154 589 T C +1210-1650 558 N C
D194 13/07/89 1710-2820 558 N C
D195 14/07/89 0433-1206 589 T C +1240-1655 558 N C, T 0433-1206
D197 16/07/89 1032-1209 589 T C +1220-2835 558 N C
D199 18/07/89 1034-1236 589 T C +1245-2830 558 N C
D200 19/07/89 0437-1228 589 T C +1245-2830 558 N C, T 0437-0516, 1040-1228
D202 21/07/89 0437-0458 589 T C
D203 22/07/89 0409-0455 589 T C +1620-2815 558 N C
D204 23/07/89 1340-2804 558 N C
D205 24/07/89 0409-1230 589 T C +1300-2730 558 N C, T 0409-0449, 1122-1230
D206 25/07/89 0332-0501 589 T C +1420-2730 558 N C
D207 26/07/89 1235-2650 558 N C
D208 27/07/89 1115-1228 589 T C
D210 29/07/89 1133-1241 589 T C +1300-2820 558 N C

August

D217 05/08/89 1510-2715 558 N C
D218 06/08/89 1147-1255 589 T C +1315-2710 558 N C
D221 09/08/89 1145-1303 589 T C +1330-2700 558 N C
D222 10/08/89 0304-1256 589 T C +1330-2645 558 N C, T 0304-0403, 1143-1256
D223 11/08/89 0248-0357 589 T C
D225 13/08/89 1645-2705 558 N C
D226 14/08/89 1745-2655 558 N C
D227 15/08/89 0257-1340 589 T C +1428-2635 558 N C, T 0257-0333, 1200-1340
D232 20/08/89 1232-1331 589 T C +1400-2630 558 N C
D233 21/08/89 0236-0324 589 T C +1700-2100 558 N C
D234 22/08/89 1920-2630 558 N C
D237 25/08/89 1910-2700 558 N C
D238 26/08/89 0532-0711 589 D C
D239 27/08/89 1640-2600 558 N C
D241 29/08/89 0528-1404 589 DT C +1435-1820 558 N C, T 1313-1404

September

D244 01/09/89 1750-2540 558 N C
D245 02/09/89 0150-0239 589 T C +1445-2420 558 N C
D246 03/09/89 0812-1415 589 DT C +1420-2604 558 N C, T 1302-1415
D247 04/09/89 0850-1417 589 DT C +1440-2600 558 N C, T 0204-0210, 1308-1417
D248 05/09/89 0204-1131 589 DT C T 0204-0234

D249 06/09/89 0723-1435 589 DT C +1534-2535 558 N C, T 1320-1435
D250 07/09/89 0136-1500 589 DT C +1650-2550 558 N C, T 0136-0220, 1303-1500
D251 08/09/89 0151-0230 589 T C +1650-2600 558 N C
D252 09/09/89 0844-1122 589 D C
D258 15/09/89 0358 0931 589 D C
D259 16/09/89 1237-1320 589 DT C +1600-2530 558 N C
D263 20/09/89 0752-1520 589 DT C +1540-1850 558 N C, T 1423-1520
D270 27/09/89 0515-0830 589 D C +1615-2430 558 N C

October
D274 01/10/89 1730-2150 558 N C
D281 08/10/89 1504-1630 589 T C +1635-2030 558 N C
D282 09/10/89 1511-1651 589 T C +1710-2320 558 N C
D283 10/10/89 2323-1647 589 T C +1705-2220 558 N C, T 2323-2343, 1525-1647
D284 11/10/89 0509-1708 589 DT C +1725-2345 558 N C, T 2224-2342, 1601-1708
D302 29/10/89 0320-1455 589 D C

November
D307 03/11/89 0309-1000 589 D C
D308 04/11/89 0224-0309 589 D C
D317 13/11/89 0932-1648 589 D C
D318 14/11/89 0553-1328 589 D C

7.9 Mawson FPS 1990 Observing Log Summary

Observations by Pene Greet. Dual-etalon sodium daytime observations mostly in summer time. Single-etalon sodium twilight observations through winter. Oxygen λ558 nm night-time observations through winter. T indicates single-etalon twilight observations.

This is one of few years when more than one wavelength was routinely observed on a single day, sodium twilight observations being followed by night-time green observations. In these circumstances files have been labelled with the wavelength as the extension to distinguish between the drift for twilight observations and the drift for night-time observations i.e. DRFTnnn.558 and DRFTnnn.589.

The total time interval is given in column 3. The time following the λ589 nm observations gives the duration of the λ558 nm observations. The last two time intervals apply to the dawn and dusk λ589 nm observations.

February

D046	15/02/90		calibrations only
D047	16/02/90 0100-2408 589 D	C	
D048	17/02/90 0013-0942 589 D	C	
D049	18/02/90 0557-2441 589 D	C	
D050	19/02/90 0059-2409 589 D	C	
D051	20/02/90 0016-0227 589 D	C	
D059	28/02/90 0645-0130 589 D	C	

March

D068	08/03/90 0409-2957 589 D	C	
D072	12/03/90 0352-2528 589 D	C	
D073	13/03/90 0256-1325 589 D	C	
D074	14/03/90		calibrations Na lamp and varying field stops
D075	15/03/90 0005-2518 589 D	C	
D078	18/03/90 0004-0915 589 D	C	
D079	19/03/90 0846-0959 589 D	C	
D080	20/03/90 0815-1131 589 D	C	
D082	22/03/90 0802-1111 589 D	C	
D085	25/03/90 0028-2434 589 D	C	
D086	26/03/90 0039-0536 589 D	C	
D088	28/03/90 0029-0909 589 D	C	
D090	29/03/90 0024-0326 589 D	C	

April

D093	02/04/90 1010-1518 589 D	C	
D094	03/04/90 0049-0438 589 D	C	
D099	08/04/90		calibrations only
D101	10/04/90 0627-1143 589 D	C	
D103	12/04/90		calibrations only
D106	15/04/90 0139-1410 589 D	C	
D109	18/04/90 0121-1102 589 D	C	

D112	21/04/90 0459-0541 589 D	C	
D114	23/04/90 0157-1321 589 D	C	
D116	25/04/90 0202-0413 589 D	C	
D120	29/04/90 1223-1310 589 D	C	
D121	30/04/90 0208-0608 589 D	C	

May

D122	01/05/90 0238-1305 589 D	C	
D124	03/05/90 0220-0936 589 D	C	
D126	05/05/90 0234-1248 589 D	C	
D128	07/05/90 0220-0737 589 D	C	
D129	08/05/90 0230-1238 589 D	C	
D130	09/05/90 0219-1243 589 D	C	
D131	10/05/90 0240-1012 589 D	C	
D134	13/05/90 0251-1230 589 D	C	

June

D154	02/06/90 0737-1137 589 D	C	
D155	03/06/90 0442-0724 589 D	C	
D156	04/06/90 0346-0536 589 D	C	
D158	06/06/90 0939-1119 589 D	C	
D159	07/06/90 0351-1136 589 D	C	1230-1901 558 N C
D163	11/06/90 0400-1134 589 DT	C	1150-1500 558 N C, 0400-0550, 0950-1134
D164	12/06/90		1655-2615 558 N C
D167	15/06/90 1004-1129 589 D	C	1210-2810 558 N C
D168	16/06/90 0416-1134 589 T	C	1151-2820 558 N C, 0416-0602, 1003-1134
D169	17/06/90 0424-1128 589 T	C	1142-2630 558 N C, 0424-0550, 1024-1128
D171	19/06/90 0414-0541 589 T	C	
D174	22/06/90 1020-1127 589 T	C	1215-2815 558 N C
D175	23/06/90 0422-0547 589 T	C	

July

D183	01/07/90 0957-1215 589 T	C	
D185	03/07/90 1006-1136 589 T	C	1220-2755 558 N C
D187	04/07/90 1000-1145 589 T	C	
D191	09/07/90 0337-1148 589 T	C	1150-2805 558 N C, 0337-0523, 1014-1148
D193	11/07/90 0405-0531 589 T	C	
D194	12/07/90 0403-1150 589 T	C	1200-2710 558 N C, 0403-0522, 1010-1150
D197	15/07/90		1520-2800 558 N C
D200	18/07/90 0356-1205 589 T	Z	1215-2750 558 N C, 0356-0507, 1034-1205
D201	19/07/90 0354-1202 589 T	Z	1213-2735 558 N C, 0354-0506, 1047-1202
D202	20/07/90 0400-0501 589 T	Z	1130-2500 558 N C
D204	22/07/90		1215-2330 558 N C
D205	23/07/90 1046-1215 589 T	C	1220-2740 558 N C
D206	24/07/90		1100-2735 558 N C
D207	25/07/90 0345-1215 589 T	C	1220-2725 558 N C, 0345-0443, 1105-1215
D208	26/07/90 0330-1223 589 T	C	1230-2710 558 N C, 0330-0442, 1101-1223
D209	27/07/90 0314-1222 589 T	C	1230-2210 558 N C, 0314-0444, 1115-1222

D210 28/07/90 1147-1202 589 T C 1240-2200 558 N C

August

D229 16/08/90 0221-0329 589 T Z
D233 20/08/90 0215-1334 589 T CZ 1350-2040 558 N C, C 0215-0314, Z 1247-1334
D241 28/08/90 1255-1353 589 T Z
D242 29/08/90 0149-1358 589 T CZ 1435-2535 558 N C, C 0149-0246, Z 1302-1358
D244 31/08/90 1311-1410 589 T C 1450-2220 558 N C

September

D250 06/09/90 0605-1430 589 T C 1520-2510 558 N C
D252 08/09/90 1333-1432 589 T C 1440-2500 558 N C

October

D281 07/10/90 1508-2400 589 T C 1625-2310 558 N C
D286 12/10/90 0149-1519 589 DT C 1726-2245 558 N C, T 1537-2330
D287 13/10/90 0159-2322 589 DT C 1705-2210 558 N C, T 1545-2322
D296 22/10/90 0308-1652 589 D C
D299 25/10/90 0331-1224 589 D C
D300 26/10/90 0353-1810 589 D C
D302 28/10/90 0231-0900 589 D C
D304 30/10/90 0642-0254 589 D C

November

D311 06/11/90 0049-2300 589 D C
D312 07/11/90 1834-2425 589 D C
D313 08/11/90 0031-2343 589 D C
D315 10/11/90 1549-2514 589 D C
D316 11/11/90 0123-1933 589 D C
D318 13/11/90 calibrations only
D321 16/11/90 calibrations only
D323 18/11/90 calibrations only
D325 20/11/90 0451-2407 589 D C
D326 21/11/90 0015-2626 589 D C
D327 22/11/90 0030-0226 589 D C
D328 23/11/90 1119-1733 589 D C
D329 24/11/90 1236-2410 589 D C
D330 25/11/90 0021-1719 589 D C
D331 26/11/90 calibrations only

December

D337 02/12/90 calibrations only
D342 07/12/90 0354-1537 589 D C

7.10 Mawson FPS 1991 Observing Log Summary

Observations by Damian Murphy. Observations mostly sodium single-etalon twilight - all dusk observations. A total of 17 twilights were obtained. Two days dual-etalon daytime observations in February. Aim was to compare with SAPR radar mesospheric winds.

February

D057	26/02/91	0956-2413	589	D	C
D058	27/02/91	0136-0516	589	D	C

August

D227	15/08/91					lamp profiles at varying current
D228	16/08/91					lamp profiles at varying current
D234	22/08/91	1232-1345	589	T	C	
D235	23/08/91	1239-1351	589	T	C	
D242	30/08/91	1300-1404	589	T	C	no radar data PCA
D243	31/08/91	1251-1411	589	T	C	

September

D246	03/09/91					D1 and D2 lamp hyperfine structure runs
D247	04/09/91	1303-1420	589	T	C	D1 and D2 lamp hyperfine structure runs
D248	05/09/91					D1 and D2 lamp hyperfine structure runs
D249	06/09/91					D1 and D2 lamp hyperfine structure runs
D250	07/09/91					D1 and D2 lamp hyperfine structure runs
D253	10/09/91	1323-1349	589	T	C	
D254	11/09/91	1332-1430	589	T	C	
D255	12/09/91	1334-1436	589	T	C	
D261	18/09/91	1356-1452	589	T	C	
D262	19/09/91	1357-1503	589	T	C	
D263	20/09/91	1400-1500	589	T	C	
D264	21/09/91	1405-1508	589	T	C	
D273	30/09/91	1439-1545	589	T	C	

October

D280	07/10/91	1505-1610	589	T	C
D281	08/10/91	1510-1614	589	T	C
D282	09/10/91	1515-1620	589	T	C
D294	21/10/91	1558-1703	589	T	C

7.11 Mawson FPS 1992 Observing Log Summary

Summary compiled from NOTE and ORES files in data directory. Data collected by Mark Conde. All observations were made at λ630 nm. The FPS was run in auto mode through hours of darkness, whenever weather permitted. Observations were in cardinal points except on a couple of occasions when there was periscope problems in which case zenith observations were recorded. A total of 113 nights of data collected.

March

D076	16/03/92					no data setup calibrations
D078	18/03/92	1915-2410	630	N	C	clear skies
D084	24/03/92	1830-2028	630	N	C	clear skies
D085	25/03/92	1746-2220	630	N	C	terminated by cloud
D086	26/03/92	1536-2200	630	N	C	terminated by cloud
D088	28/03/92	1620-2524	630	N	C	moderate auroral activity, clear skies
D089	29/03/92	1400-2530	630	N	C	reasonably active aurora, clear skies
D090	30/03/92	1438-2516	630	N	C	clear skies
D091	31/03/92	1434-2530	630	N	C	early cirrus cleared

April

D095	04/04/92					frequency-stabilized laser trials, no obs.
D099	08/04/92	1649-2400	630	N	C	fs laser drift, clear to thin cirrus
D100	09/04/92		630	N	C	all obs. cloud contaminated
D102	11/04/92	1320-2610	630	N	C	
D103	12/04/92	1420-2630	630	N	C	clear sky, problems with fs laser drift
D104	13/04/92	1348-2630	630	N	C	clear sky, very little aurora, fs laser drift
D105	14/04/92	1412-2645	630	N	C	crystal clear skies, quiet aurora from 1700
D106	15/04/92	1400-2630	630	N	C	clear skies, quiet then aurora from midnight
D108	17/04/92	1328-2645	630	N	C	some cloud cleared, no aurora
D109	18/04/92	1542-2645	630	N	C	clear sky, periscope problems fixed
D110	19/04/92	1333-2612	630	N	C	perfectly clear skies, huge magnetic activity
D111	20/04/92	1338-2710	630	N	C	perfectly clear skies
D112	21/04/92	1330-2717	630	N	C	perfectly clear skies, not much aurora
D113	22/04/92	1355-2700	630	N	C	crystal clear sky
D114	23/04/92	1250-2500	630	N	C	cirrus cleared then 8/8 later
D119	28/04/92	1200-1700	630	N	Z	terminated by cloud, too much wind so Z
D120	30/04/92	1224-2700	630	N	C	some cloud, little aurora

May

D124	03/05/92	1150-2200	630	N	C	obs. terminated by cloud
D129	08/05/92	1200-2750	630	N	C	clear all night
D130	09/05/92					order measurement
D134	13/05/92	1234-2810	630	N	C	all obs. cloud contaminated
D136	15/05/92	1133-2840	630	N	C	crystal clear skies
D137	16/05/92	1149-2816	630	N	C	clear to thin cirrus
D138	17/05/92	1130-2834	630	N	C	clear skies, problems with pls light
D139	18/05/92	1210-2820	630	N	C	some cloud, problems with pls light
D140	19/05/92	1230-2840	630	N	C	some cirrus, obs. disrupted by power failure

D141	20/05/92 1200-2845 630 N C	mostly clear skies, no aurora
D143	22/05/92 1440-1902 630 N C	some cloud mostly clear, periscope problems
D144	23/05/92 1118-2042 630 N C	obs. terminated by cloud, some aurora
D146	25/05/92 1340-2836 630 N C	some cloud, no aurora
D148	27/05/92 1100-2730 630 N C	obs. terminated by cloud, fint aurora
D150	29/05/92 1020-2720 630 N C	obs. terminated by cloud
D152	31/05/92 1100-2840 630 N C	clear sky, no aurora

June

D153	01/05/92 1150-2910 630 N C	clear sky, no aurora
D154	02/06/92 1035-2900 630 N C	clear sky, no aurora
D155	03/06/92 1115-2910 630 N C	clear sky, no aurora
D156	04/06/92 1140-2910 630 N C	clear sky clouds developed, no aurora
D157	05/06/92 1230-2910 630 N C	some cirrus, no aurora
D158	06/06/92 1050-2910 630 N C	thin cirrus cleared, no aurora
D159	07/06/92 1100-2910 630 N C	some cloud, mostly clear
D160	08/06/92 1050-2930 630 N C	some cloud, mostly clear
D161	09/06/92 1045-2915 630 N C	some cloud, mostly clear, periscope problems
D162	10/06/92 1105-2900 630 N C	clear skies becoming cloudy, some aurora
D163	11/06/92 1145-2910 630 N C	some cloud
D164	12/06/92 1020-2920 630 N C	clear skies, little aurora
D165	13/06/92 1050-2935 630 N C	clear skies, some aurora
D166	14/06/92 1015-2930 630 N Z	some cloud, periscope problems
D172	20/06/92 1215-2900 630 N C	clear skies
D173	21/06/92 1110-2935 630 N Z	cloudy & windy at times, periscope problems
D175	23/06/92 1040-2830 630 N C	some cloud at times, aurora
D179	27/06/92 1140-3000 630 N C	all obs. cloud contaminated
D181	29/06/92 1045-2921 630 N C	clear skies, active aurora most of night
D182	30/06/92 1035-2530 630 N C	obs. terminated by cloud

July

D187	05/07/92 1150-2930 630 N C	skies clear, some aurora
D188	06/07/92 1040-2930 630 N C	skies utterly cloudless
D189	07/07/92 1035-2854 630 N C	clear skies
D190	08/07/92 1040-2100 630 N C	obs. terminated by cloud
D191	09/07/92 1214-2900 630 N C	clear skies
D192	10/07/92 1113-2908 630 N C	clear skies
D193	11/07/92 1030-2905 630 N C	clear skies
D194	12/07/92 1050-2922 630 N C	clear skies, active aurora
D195	13/07/92 1055-2911 630 N C	clear skies, faint aurora
D196	14/07/92 1039-2907 630 N C	mostly clear, some cirrus
D197	15/07/92 0956-2500 630 N C	obs. terminated by cloud
D199	17/07/92 1629-2846 630 N C	some cloud
D200	18/07/92 1112-2700 630 N C	obs. terminated by cloud
D201	19/07/92 1210-2900 630 N C	mostly clear, some cirrus, weak emission I
D202	20/07/92 1129-2836 630 N C	cirrus, extensive aurora, logger problems
D208	26/07/92 1511-2802 630 N C	some thin cloud cover all night
D209	27/07/92 1342-2843 630 N C	clear skies, some faint aurora

D210	28/07/92	1205-2810	630	N C	clear skies, some faint aurora
D211	29/07/92	1155-2300	630	N C	some cloud, obs. terminated by blizzard
D213	31/07/92	1224-2655	630	N C	mostly clear, obs. terminated by cirrus

August

D215	02/08/92	1148-2726	630	N C	clear skies, minor periscope problems
D216	03/08/92	1200-2800	630	N C	clear skies, no visible aurora
D217	04/08/92	1202-2800	630	N C	clear skies, no visible aurora
D218	05/08/92	1236-2755	630	N C	mostly clear, some cirrus, some aurora
D219	06/08/92	1200-2804	630	N C	mostly clear, active aurora, power failure
D220	07/08/92	1211-2200	630	N C	cirrus, obs. terminated by blizzard
D221	08/08/92	1556-2800	630	N C	cirrus, extensive slowly-moving aurora
D222	09/08/92	1238-2750	630	N C	some cirrus, no visible aurora
D223	10/08/92	1214-2800	630	N C	some cloud at times
D224	11/08/92		630	N C	auto obs. drift rejected
D227	14/08/92	1220-2738	630	N C	some cirrus
D229	16/08/92	1228-2704	630	N C	mostly clear, high winds, periscope troubles
D234	21/08/92	1241-1800	630	N C	cloud throughout the night, no vis aurora
D235	22/08/92	1533-2807	630	N C	some cloud, active B
D236	23/08/92	1325-2703	630	N C	nil cloud, nil aurora, nil moon
D237	24/08/92	1415-2709	630	N C	nil cloud, nil aurora, nil moon
D238	25/08/92	1321-2710	630	N C	some cloud throughout night
D240	27/08/92	1347-2645	630	N C	clear to thin cirrostratus, active aurora

September

D245	01/09/92	1358-2732	630	N C	cirrus, mostly clear, no visible aurora
D246	02/09/92	1427-2648	630	N C	clear skies, active and bright aurora
D247	03/09/92	1353-2618	630	N C	clear skies, some active aurora
D249	05/09/92	1444-2630	630	N C	mostly clear, no visible aurora
D250	06/09/92	1410-2200	630	N C	some cloud, high winds, periscope troubles
D252	08/09/92	1540-2549	630	N C	mostly clear, some cirrus
D253	09/09/92	1352-2600	630	N C	clear skies, no visible aurora
D254	10/09/92	1501-2600	630	N C	some cirrus, some bright active aurora
D255	11/09/92	1430-2600	630	N C	8/8 cirrus
D257	13/09/92	1519-2600	630	N C	clear skies, no moon, no visible aurora
D258	14/09/92	1523-2500	630	N C	? not analysed, no note file
D259	15/09/92	1500-2510	630	N C	? not analysed, no note file
D262	18/09/92	1440-2530	630	N C	some cloud, Kloa trip
D264	20/09/92	1452-2505	630	N C	few wisps cloud, Kloa trip

October

D287	13/10/92	1715-2325	630	N C	sky clear
D292	18/10/92	1736-2300	630	N C	? not analysed, no note file
D293	19/10/92				low resolution order
D294	20/10/92	1732-2235	630	N C	clear skies
D295	21/10/92	1713-2038	630	N C	cirrus, peroscope problems on shutdown

November

D309	4/11/92		630	N C	no data in NRED file

7.12 Mawson FPS 1993 Observing Log Summary

A trial OH mesospheric observing program was run in early February by Pene Greet and John Innis. Six nights of OH observations were made. After D055 all observations were of the thermospheric λ630 nm line. Two observing programs were run in campaign mode, zenith only observations were done in 3 periods, prior to April 15, all of July, and after September 15. At all other times observations were made at 60 degrees off zenith in the cardinal points. In all 67 nights of zenith observations and 74 nights of cardinal point observations were made.

Notes compiled from John Innis' annual FPS report.

February

D043 12/02/93	trial OH obs., not dark enough
D044 13/02/93 1813-2154 843 N Z	OH Q branch, 11 zenith profiles, OK dark
D045 14/02/93 1900-2100 834 N C	OH P branch, 3 profiles, very weak I
D046 15/02/93 1800-2150 834 N C	OH Q branch, 8 profiles
D050 19/02/93 1850-2150 843 N C	OH 3x P and 6x Q profiles
D051 20/02/93 1800-2230 834 N C	OH 1P branch, 17 Q branch profiles
D055 24/02/93 1825-2215 630 N Z	auroral arcs passing overhead during night
D057 26/02/93 1734-2215 630 N Z	aurorae and cloud increasing during night
D059 28/02/93 1757-2225 630 N Z	little activity until morning twilight

March

D060 01/03/93 1747-2045 630 N Z	clouded out, some activity
D062 03/03/93 1834-2238 630 N Z	very active ~2100
D063 04/03/93 1809-2300 630 N Z	active near end of night
D064 05/03/93 1827-2225 630 N Z	some cirrus during night, data affected?
D065 06/03/93 1746-2305 630 N Z	good displays all night
D066 07/03/93 1807-2251 630 N Z	clouded out. Good displays early
D067 08/03/93 1723-2255 630 N Z	displays start and end, quiet middle
D068 09/03/93	'Blizzing' - order determination
D070 11/03/93	order determination (again) in afternoon
D070 11/03/93 1700-2325 630 N Z	nice displays, particularly near end
D071 12/03/93 1743-1910 630 N Z	clouds opened, then closed!
D073 14/03/93 1629-2325 630 N Z	active early
D074 15/03/93 1626-2335 630 N Z	good displays during night
D075 16/03/93 1636-2404 630 N Z	some nice, but brief displays
D076 17/03/93 1717-2342 630 N Z	brief cloud ~2000, nice crimson substorms
D077 18/03/93 1647-2351 630 N Z	generally quiet night
D078 19/03/93 1609-2352 630 N Z	displays for most of night
D080 21/03/93 1645-2405 630 N Z	good displays later in night
D081 22/03/93 1633-2359 630 N Z	active night, some nice displays
D082 23/03/93 1742-2423 630 N Z	fair activity
D083 24/03/93 1624-2415 630 N Z	good early, clouded out later
D084 25/03/93 1557-2400 630 N Z	snowed out
D086 27/03/93 1608-1720 630 N Z	clouded out ~1700

D089 30/03/93 1741-2001 630 N Z clouded out again

April

D091 01/04/93 1523-2433 630 N Z quiet early, active later
D092 02/04/93 order determinations/bulk separations afternoon/early night
D092 02/04/93 1747-2404 630 N Z some brief displays
D094 04/04/93 1554-2445 630 N Z several nice displays, cirrus in W at dawn
D099 09/04/93 1445-2511 630 N Z some active displays
D103 13/04/93 1346-2525 630 N Z an active night
D104 14/04/93 1355-2526 630 N Z active night, some good storms
D105 15/04/93 1355-2530 630 N Z quiet initially, good after ~ 2030
D106 16/04/93 1343-2550 630 N C active ~1730-2300. Cirrus near dawn
D109 19/04/93 1723-2550 630 N C active later in night. Late start - jolly!
D114 24/04/93 1400-2550 630 N C some good displays
D116 26/04/93 1343-2600 630 N C not much activity, brief storm ~ 2115
D117 27/04/93 1332-1630 630 N C clouded out. Calib run 1643 - 2600
D118 28/04/93 1324-2555 630 N C weak displays for most of night
D119 29/04/93 1328-2624 630 N C quiet until ~1900, active ~2030 - 2300
D120 30/04/93 1301-2607 630 N C good displays in second part of night

May

D121 01/05 93 1313-2625 630 N C quiet night, very little activity
D123 03/05/93 1306-2618 630 N C some moderate displays only
D126 06/05/93 1418-2640 630 N C cloud till ~1900. Active night
D127 07/05/93 1259-2630 630 N C active night. MT ran FPS as JI jollying
D129 09/05/93 1912-2645 630 N C blowing snow early, active night
D130 10/05/93 1302-2638 630 N C some cloud, bright but brief displays
D131 11/05/93 1318-2654 630 N C quiet till ~2000, then reasonable
D132 12/05/93 1302-2646 630 N C several bright storms
D133 13/05/93 1226-2659 630 N C quiet initially, good 2030-2400
D134 14/05/93 1235-1800 630 N C clouded out
D140 20/05/93 1455-2710 630 N C cloud early, generally quiet
D141 21/05/93 1217-2723 630 N C quiet early and late, good 1900-2400
D142 22/05/93 1215-2627 630 N C quiet early, storm and cloud ~2030
D144 24/05/93 1212-2710 630 N C quiet early and late, ok to good middle
D145 25/05/93 1216-2716 630 N C quiet early, reasonable ~2100-2400
D146 26/05/93 1159-2744 630 N C weak to moderately good displays
D150 30/05/93 1228-1527 630 N C fairly quiet, clouded out
D151 31/05/93 1204-0225 630 N C cloudy, quiet, storm ~2230, cloud 2300

June

D153 02/06/93 1205-0345 630 N C quiet start, good after ~ 1900
D154 03/06/93 1159-2100 630 N C clouded out, strong wind (40 kts)
D156 05/06/93 1430-0406 630 N C cloud delayed start, active night
D161 10/06/93 1329-0353 630 N C cloud most of night, some activity ~2230
D162 11/06/93 1219-0435 630 N C clear. Quiet start, active later
D163 12/06/93 1151-0315 630 N C cloud all night, snow later. Data no good
D165 14/06/93 1143-0355 630 N C clear, quiet till ~19, then moderate to good

D166 15/06/93 1218-0340 630 N C clear, generally a quiet night
D167 16/06/93 1209-1722 630 N C clouded out
D169 18/06/93 1210-0329 630 N C clear, a quiet night
D173 22/06/93 1224-1620 630 N C clear, but blowing snow gave early shutdown
D174 23/06/93 1202-1700 630 N C blowing snow gave early shutdown
D177 26/06/93 1220-0350 630 N C some cloud
D179 28/06/93 1226-2030 630 N C blowing snow again

July
D186 05/07/93 1212-0345 630 N Z good displays ~20 to 00, quiet otherwise
D187 06/07/93 1203-0345 630 N Z quiet till ~19, then moderate to good
D188 07/07/93 1217-1700 630 N Z clouded out by ~16
D189 08/07/93 1307-1630 630 N Z cloud increased from dusk, snow at 1630
D191 10/07/93 1200-0335 630 N Z active ~19 to ~00, quiet otherwise
D192 11/07/93 1156-0330 630 N Z good displays for most of night
D193 12/07/93 1210-0328 630 N Z aurora ~21, some data lost due to lsc
D194 13/07/93 1221-0330 630 N Z moderate night, bright ~23, cloud ~00?
D199 18/07/93 1258-0330 630 N Z separation servo lost lock this night
D200 19/07/93 1215-1900 630 N Z clouded out at ~19
D201 20/07/93 1323-0300 630 N Z cloudy/clear night, no Hg calibration data
D202 21/07/93 1226-0312 630 N Z an active night
D203 22/07/93 1217-0312 630 N Z quiet early, moderate to good 19 on, thin cloud
D208 27/07/93 1206-0245 630 N Z cloudy during night, clouded out ~2230
D209 28/07/93 1227-0242 630 N Z good 1930-2130, clouded out ~2230
D211 30/07/93 1231-0254 630 N Z quiet start, moderate 17-19 , moderate to good 19 on
D212 31/07/93 1224-0248 630 N Z quiet till 1830, then moderate, good 2050-2330

August
D213 01/08/93 1225-1827 630 N C strong wind and blowing drift
D215 03/08/93 1356-0342 630 N C cloud increasing during night
D217 05/08/93 1301-0218 630 N C quiet start, moderate ~1630, good ~18, cloud
D218 06/08/93 1330-0328 630 N C active night
D219 07/08/93 1314-0250 630 N C power failure at 2005. Active night
D220 08/08/93 1459-0310 630 N C quiet start, pulsing ~19-2030, good ~02
D221 09/08/93 1338-1730 630 N C snow - early shutdown
D223 11/08/93 1723-0230 630 N C late clearing after snow, good ~23-01
D224 12/08/93 1330-0230 630 N C loss of p'scope pointing from wind ~20
D225 13/08/93 1328-0250 630 N C quiet start, moderate 1930-0030, pulsing at end
D229 17/08/93 1330-0220 630 N C loss of separation servo lock ~2125
D230 18/08/93 1337-0213 630 N C active night
D231 19/08/93 1340-0201 630 N C moderate to good ~17 on, v. bright ~20 to 2030
D232 20/08/93 1336-0157 630 N C moderate to good ~18-23, then moderate till dawn
D233 21/08/93 1353-0201 630 N C moderate to good most of night, good ~1830, 22
D234 22/08/93 1354-0143 630 N C generally moderate night, good ~2150, 23-00
D235 23/08/93 1359-0135 630 N C weak to moderate 19-20, good ~2120, 2250
D236 24/08/93 1349-0130 630 N C quiet till ~21, then moderate. Good after ~2250
D237 25/08/93 1353-0127 630 N C quiet till ~18, moderate till 2130, then good
D238 26/08/93 1410-0119 630 N C cloud increasing, bright ~2050-2150, & 2350

D241 29/08/93 1414-1429 630 N C strong wind and blowing snow
D242 30/08/93 1423-0115 630 N C some cloud, moderate ~21, good ~22, then moderate
D243 31/08/93 1419-0128 630 N C some cloud, weak/mod. 18-21, mod/good to 0030

September
D244 01/09/93 1422-0106 630 N C quite a cloudy night, data of little value
D245 02/09/93 1428-0105 630 N C quiet start, moderate ~1550, on good ~1920-2330
D246 03/09/93 1500-0056 630 N C mod most of night, good ~1940-20, & 23-00
D247 04/09/93 1430-0100 630 N C active night - moderate to good all night
D248 05/09/93 1429-1700 630 N C wind gust after ~17 put p'scope off posn
D249 06/09/93 1451-0039 630 N C moderate from start, good ~2020-2240
D250 07/09/93 1440-0051 630 N C some good displays in early morning
D251 08/09/93 1449-0037 630 N C quiet start,good patches after ~21, late cloud
D254 11/09/93 1512-0044 630 N C
D256 13/09/93 1522-0013 630 N C an active night.
D258 14/09/93 1523-0001 630 N C thin o'cast from ~19, thick cloud at end
D259 16/09/93 1527-0000 630 N Z mod to good ~1730-2130, otherwise quiet
D260 17/09/93 1518-0000 630 N Z quiet, except good ~2130-22, and 2330-00
D262 19/09/93 1534-0003 630 N Z quiet start, moderate ~1850 on, good ~22-2330
D264 21/09/93 1532-2347 630 N Z moderate ~16 on, good ~1915-2040, 2130-2215
D265 22/09/93 1540-2346 630 N Z quiet night, only one or two brief 'glows'
D266 23/09/93 1554-0030 630 N Z quiet night, moderate-good 2030-21, late cloud
D267 24/09/93 1604-2331 630 N Z an active night, some cloud esp. near end
D268 25/09/93 1550-2330 630 N Z quiet night, some brief good display after 20
D269 26/09/93 1605-2320 630 N Z weak ~18 on, mod ~2030 on, good ~2230-23
D270 27/09/93 1600-2310 630 N Z moderate to good night, bright at ~1805 (brief)

October
D274 01/10/93 problems with LSC motion this night - no data
D275 02/10/93 1625-2257 630 N Z active night after quiet start
D277 04/10/93 1642-2235 630 N Z moderate start, good ~19-2130, then mod/weak to end
D278 05/10/93 1800-2240 630 N Z good ~2110-2130, but cloud after ~21
D283 10/10/93 1710-2200 630 N Z active night, some bright displays
D284 11/10/93 1710-2150 630 N Z active, but cloudy night
D286 13/10/93 1731-2130 630 N Z moderate night, but bright ~1945-2005
D287 14/10/93 1746-2126 630 N Z moderate displays all night, good right at end
D288 15/10/93 1751-2116 630 N Z moderate displays all night

7.13 Mawson FPS 1994 Observing Log Summary

Observations by Michael Manion. Observations of the λ630 nm oxygen thermospheric emission line. Generally λ630 nm cardinal point observations were run but also had two zenith observing campaigns in the first week of May and September. A not particularly successful OH observing campaign in late spring – intensity very low. A large number of calibrations were performed throughout the year. 13 nights of zenith λ630 nm, 94 nights of cardinal λ630 nm and 14 nights λ834 nm observations.

Damian Murphy carried out calibrations and finesse measurements in the summer. Notes compiled from monthly reports and daily NOTE files.

February

D054 23/02/94	order
D057 26/02/94	calibrations and order
D058 27/02/94	fibre 1 and 2 calibrations

March

D061 02/03/94	Hg and FSLS field stop trials
D066 07/03/94	field stop trials at scan attn 4
D070 11/03/94	laboratory temperature trials
D077 18/03/94	laboratory temperature trials
D090 31/03/94	order and calibrations

April

D091	01/04/94	1556-0040	630	N	C	mild activity all night (1 order off)
D092	02/04/94	1500-0040	630	N	C	good activity all night (1 order off)
D093	03/04/94	1508-0040	630	N	C	good activity all night (1 order off)
D094	04/04/94	1454-0051	630	N	C	mild activity all night (1 order off)
D095	05/04/94	1557-0051	630	N	C	active all night (Correct order now)
D096	06/04/94	1500-0057	630	N	C	cloudy <1900, active rest of night
D097	07/04/94	1457-2237	630	N	C	LSC failure. Active all night
D098	08/04/94	1638-0105	630	N	C	good aurora all night
D099	09/04/94	1435-0106	630	N	C	PERISCOPE blown off direction!
D100	10/04/94	1430-0117	630	N	C	active to 2130, then cloudy
D107	17/04/94	1400-0135	630	N	C	active briefly @ 0100, otherwise quiet
D108	18/04/94	1400-0135	630	N	C	active 1930-2030,0110-0130, otherwise mild
D109	19/04/94	1350-0140	630	N	C	bright moon, quiet mostly, active 2200-2300
D110	20/04/94	1350-0141	630	N	C	vlouds arrived >1530, some activity
D111	21/04/94	1340-0147	630	N	C	bright moon, active 1944-0000, quiet mostly
D112	22/04/94	1352-0152	630	N	C	mostly a quiet night. Bright moon (83%)
D113	23/04/94	1354-0153	630	N	C	mild all night, active 2100-2140
D114	24/04/94	1329-0153	630	N	C	mild activity all night, bright moon (96%)
D115	25/04/94	1344-0151	630	N	C	some cloud, low activity, bright moon (99%)
D116	26/04/94	1330-0201	630	N	C	very quiet, some cloud, bright moon (99%)
D117	27/04/94	1320-0207	630	N	C	moderate activity, active 2100-0030
D118	28/04/94	1320-0200	630	N	C	very quiet, no aurora! Bright moon (90%)
D119	29/04/94	1320-0216	630	N	C	quiet mostly, active 2230-2300

May

D121	01/05/94	1310-0214	630	N	Z	good activity all night
D122	02/05/94	1310-0215	630	N	Z	good activity all night
D123	03/05/94	1310-0224	630	N	Z	good activity all night
D124	04/05/94	1319-0225	630	N	Z	good activity all night
D125	05/05/94	1706-0221	630	N	Z	some blowing snow. Active night
D126	06/05/94	1300-0236	630	N	Z	cloudy <1900, active night
D127	07/05/94	1252-0237	630	N	Z	mildly active night
D128	08/05/94	1250-0234	630	N	C	cloud <1400, reasonably active night
D129	09/05/94	1250-1732	630	N	C	bad weather came up – shutdown early
D130	10/05/94	1250-0243	630	N	C	some cloud, very good aurora
D133	13/05/94	1240-0240	630	N	C	cloudy night, not much activity
D138	18/05/94	1230-0302	630	N	C	active 1850-2300. Reasonable activity
D141	21/05/94	1220-0300	630	N	C	cloudy, not much activity
D143	23/05/94	1220-0317	630	N	C	good activity, bright moon (95%)
D144	24/05/94	1210-0251	630	N	C	mild activity all night, bright moon (99%)
D145	25/05/94	1210-0315	630	N	C	very active 2145-2300 else mild, moon (99%)
D146	26/05/94	1210-0310	630	N	C	periscope lost direction! OK <1800
D147	27/05/94	1210-0322	630	N	C	periscope lost direction! OK <2128
D149	29/05/94	1200-1932	630	N	C	cloud, some activity. Bad weather came up

June

D156	05/06/94	1150-0336	630	N	C	clear, very active night
D158	07/06/94	1356-0346	630	N	C	some cloud, quiet except 2100-2300
D159	08/06/94	1153-0346	630	N	C	clear, good activity most of the night
D160	09/06/94	1149-0126	630	N	C	periscope blown off course. OK <1810
D162	11/06/94	1150-0343	630	N	C	some blowing snow, mildly active night
D165	14/06/94	1206-0343	630	N	C	clear, active 2024-0000
D178	27/06/94	1150-0351	630	N	C	clear, good activity >2000
D179	28/06/94	1204-0357	630	N	C	clear, good activity 2250-0100
D180	29/06/94	1347-2304	630	N	C	some cloud. Weather turned bad

July

D182	01/07/94	1150-0343	630	N	C	mild night, active 2140-2340
D183	02/07/94	1150-0343	630	N	C	some cloud, active 2020-2250
D184	03/07/94	1200-0344	630	N	C	active night >2200
D185	04/07/94	1200-0345	630	N	C	active all night, good 1940-2330
D186	05/07/94	1200-0345	630	N	C	very quiet night, cloudy
D187	06/07/94	1231-0353	630	N	C	scan FSLS all night
D188	07/07/94	1425-0340	630	N	C	scan Hg all night
D189	08/07/94	1200-0342	630	N	C	scan FSLS all night
D190	09/07/94	1200-1752	630	N	C	early shutdown due to bad weather. Quiet
D191	10/07/94	1200-0345	630	N	C	scan Hg all night
D192	11/07/94	1222-0334	630	N	C	quiet night, mild activity 2300-0140
D193	12/07/94	1210-0329	630	N	C	very quiet night
D194	13/07/94	1151-0334	630	N	C	scan FSLS all night
D195	14/07/94	1109-0332	630	N	C	scan Hg all night
D196	15/07/94	1210-0330	630	N	C	scan FSLS all night

D199	18/07/94				order determination
D200	19/07/94	1220-0324	630 N	C	cloudy <1800, active 1930-2330
D201	20/07/94	1220-0328	630 N	C	scan Hg all night
D202	21/07/94	1212-0330	630 N	C	scan FSLS all night
D203	22/07/94	1230-0320	630 N	C	scan Hg all night
D205	24/07/94	1417-0312	630 N	C	good activity 2220-0000
D206	25/07/94	1250-0312	630 N	C	active night, good 1900-2330
D207	26/07/94	1240-0312	630 N	C	mild night, active 1955-2040
D208	27/07/94	1249-0304	630 N	C	quiet night. Some activity 2048-2230
D209	28/07/94	1333-0316	630 N	C	scan FSLS all night
D210	29/07/94	1240-0303	630 N	C	some cloud, active 2028-2150
D211	30/07/94	1250-0303	630 N	C	scan Hg all night
D212	31/07/94	1312-0254	630 N	C	scan FSLS all night

August

D213	01/08/94	1311-0254	630 N	C	some cloud, not much activity
D214	02/08/94	1414-0254	630 N	C	scan Hg all night
D215	03/08/94	1300-0251	630 N	C	some cloud, active >2000
D216	04/08/94	1149-0301	630 N	C	scan FSLS all night
D217	05/08/94	1343-0254	630 N	C	some cloud, active 2000-0130
D218	06/08/94	1348-0243	630 N	C	active night 1800 to 2330
D219	07/08/94	1418-0241	630 N	C	active 2300 to 0020
D220	08/08/94	1541-0234	630 N	C	active 1950 to 2300
D221	09/08/94	1357-0107	630 N	C	early shutdown due to falling snow
D222	10/08/94	1436-0239	630 N	C	scan Hg all night
D223	11/08/94				order determination
D224	12/08/94	1357-0220	630 N	C	cloudy >1900, active above clouds
D225	13/08/94	1431-0231	630 N	C	scan FSLS all night
D226	14/08/94		834 N		spectra very faint, filter 4 tilt = 5 deg.
D227	15/08/94		834 N		spectra very faint, filter 4 tilt = 2.5 deg.
D228	16/08/94		834 N		spectra very faint, filter 4 tilt = 3.75 deg.
D229	17/08/94		834 N		spectra very faint, filter 4 tilt = 7 deg.
D230	18/08/94		834 N		spectra very faint, filter 4 tilt = 5 deg.
D234	22/08/94				order determination(s)
D235	23/08/94	1427-0144	834 N	C	OH obs. (Hg as cal. source)
D236	24/08/94				scan FSLS, 1 scan then 10
D237	25/08/94	1545-0203	834 N	C	OH obs. (FSLS as cal. source)
D238	26/08/94				scan FSLS, filter 2 then filter 6
D239	27/08/94	1412-0209	834 N	C	OH obs. (FSLS as cal. source)
D240	28/08/94	1410-2130	834 N	C	OH obs., periscope blown off course
D243	31/08/94				light source carrier test, LSC failure

September

D244	01/09/94				LSC test (20 scans FSLS, LSC out/in)
D245	02/09/94	1502-0113	630 N	Z	vertical Winds
D246	03/09/94	1509-0104	630 N	Z	vertical Winds
D247	04/09/94	1443-0102	630 N	Z	vertical Winds
D248	05/09/94	1429-0056	630 N	Z	vertical Winds

D250	07/09/94	1500-0055	630	N Z	vertical Winds
D251	08/09/94	1520-0043	630	N Z	vertical Winds
D252	09/09/94	1431-0141	630	N C	simulated Observing, field stop = 4.5 mm
D253	10/09/94	1551-0035	630	N C	vertical Winds
D254	11/09/94				LSC test (10 scans FSLS, 10 scans nothing)
D255	12/09/94	1607-0027	630	N C	field stop calibrations
D258	15/09/94	1537-1728	630	N C	shutdown early due to blowing snow
D264	21/09/94	1530-2350	630	N C	mild night, active >2245
D266	23/09/94	1540-2344	630	N C	mild activity >2200

October

D281	08/10/94	1652-2335	630	N C	good activity all night
D282	09/10/94	1650-2212	630	N C	good activity all night
D284	11/10/94				order determination
D285	12/10/94	1747-2157	630	N C	mild activity
D287	14/10/94	1801-2132	630	N C	good activity 1740-1920
D288	15/10/94	1740-2133	630	N C	some cloud, active 2040-2130
D291	18/10/94				FSLS and CHORD calibrations
D292	19/10/94				FSLS calibrations
D293	20/10/94				Davis and Mawson Hg lamp comparison
D294	21/10/94				field stop tests
D295	22/10/94				FSLS and LSC calibrations
D297	24/10/94				Xe and Ar lamp cals, FSLS through various fs
D298	25/10/94				Davis and Mawson FSLS comparison

November

D309	05/11/94				order determination
D310	06/11/94				order determination t ~ 0.1 mm
D311	07/11/94				order determination and etalon finesse
D312	08/11/94				etalon finesse
D313	09/11/94				etalon finesse
D315	11/11/94				reflective finesse
D316	12/11/94				reflective finesse
D317	13/11/94				reflective finesse
D318	14/11/94				reflective finesse
D319	15/11/94				reflective finesse
D320	16/11/94				reflective finesse
D326	22/11/94				xenon etalon finesse
D327	23/11/94				Davis and Mawson FSLS comparison
D328	24/11/94				barometer and separation transducer tests
D329	25/11/94				Davis and Mawson Hg lamp comparisons
D333	29/11/94				order determination t ~ 'nice'

December

D335	01/12/94				order determination
D336	02/12/94				logger heating test
D341	07/12/94				calibrations: standard, dwell time, and fibre comparisons

7.14 Mawson FPS 1995 Observing Log Summary

Observations by Simon Edwards. The FPS was converted to run under pc control during the 1994/95 summer. This enabled improved automatic observing sequences as calibrations, C, could be performed at specified intervals rather than after each observation, ZNESW. Three types of observing campaigns were run:

1. Oxygen 630 nm cardinal point, typically observations ZNESWC.

2. Oxygen 630 nm zenith, typically observations CZZSZZCZZEZZ three zenith campaigns were held, 15 – 29 April, 14 – 28 June and 1 – 16 September.

3. OH Q branch at 835 nm cardinal point, typically observations ZCNECSWC with cardinal point observations at 70 degrees as distinct from 60 degrees for 630 nm observations, five OH campaigns were held, 12 – 28 February, 15 – 29 March, 12 – 26 July, 16 – 31 August and 1 – 21 October.

Some difficulties were experienced with the periscope, particularly in strong winds. This occasionally resulted in zenith only observations on some days.

Regular overnight runs of frequency-stabilised laser profiles were obtained to monitor short-term drift. These calibration runs were performed on cloudy nights unsuitable for observations. Short-term drift was not a problem through the year.

Notes compiled from monthly reports and daily NOTE files.

February

D185	03/07/84	1717-2307	558	N	MA	changed order at start, auroral substorm
D058	27/02/95	1935-2103	835	N	C	clear, auroral activity all night
D059	28/02/95					order determination carried out

March

D060	01/03/95					order determination
D061	02/03/95					separation change/Order Determination
D063	04/03/95	1836-2221	630	N	C	some cloud, some aurora
D067	08/03/95	1730-2245	630	N	C	clear to 1/8 cloud at close, quiet
D068	09/03/95	1719-2250				FSLS Laser scans
D070	11/03/95	1804-1912	630	N	C	lost parallelism through the night
D071	12/03/95	1727-2300	630	N	C	clear, some aurora
D073	14/03/95					separation changes/order determinations
D074	15/03/95	1630-2323	835	N	C	OH obs., order determinations
D075	16/03/95	2038-2320	835	N	C	256 channel OH obs., order determinations
D076	17/03/95	1517-2330				FSLS Laser scans
D077	18/03/95	1652-2330	835	N	C	clear to 1/8 at 21, mostly quiet
D088	29/03/95	1553-0020	835	N	C	Xe drift source, clear
D089	30/03/95	1515-1928	835	N	C	Xe drift source, clear, lost parallelism 1928

April

D094	04/04/95	1408-2450	630	N	C	thin cloud 5/8. Quiet except around 2400
D099	09/04/95	1457-2400				FSLS Laser scans
D101	11/04/95	1433-2400	630	N	C	clear to thin 8/8 at end, moderate activity
D102	12/04/95	1404-2400	630	N	C	thin cloud 8/8, moderate activity
D104	14/04/95	1345-2400	630	N	C	clear to thin 7/8 at end, moderate activity
D105	15/04/95	1621-2400	630	N	Z	cloudy night, bright 99% moon, quiet night
D107	17/04/95	1315-2400	630	N	Z	clear night, bright 96% moon, quiet night
D109	19/04/95	1348-2540	630	N	Z	cloud increase to 8/8 by close, mostly quiet
D110	20/04/95	1334-2540	630	N	Z	mostly clear, mostly quiet
D111	21/04/95	1403-2540	630	N	Z	clear to thin 8/8 at end, mostly quiet
D113	23/04/95	1350-2042	630	N	Z	thin 8/8 cloud all night, active 1830 onwards
D114	24/04/95	1402-2550	630	N	Z	cloud 2/8 all night, strong activity at times
D115	25/04/95	1323-2550	630	N	Z	cloud increased to 8/8, some activity
D116	26/04/95	1440-2600				FSLS Laser scans
D117	27/04/95	1310-2600	630	N	Z	clear at start, 8/8 + blowing snow by end
D119	29/04/95	1742-2510	630	N	Z	clear at start, blowing snow at end

May

D123	03/05/95	1454-2620	630	N	C	cloud 7/8. Periods of moderate activity
D124	04/05/95	1211-2620	630	N	C	clear sky. Mostly quiet auroral night
D125	05/05/95	1251-2620	630	N	C	clear, periods of activity, p. problems
D127	07/05/95	1305-2630	630	N	C	clear sky. Moderate to strong aurora
D128	08/05/95	1235-2127	630	N	C	cloud 8/8. Shutdown early - blowing snow
D129	09/05/95	1202-2630				FSLS Laser Scans
D130	10/05/95	2112-2640	630	N	C	cloud 2/8, cleared, mostly quiet
D131	11/05/95	1248-2640	630	N	C	clear sky, very quiet night
D133	13/05/95	1129-2640	630	N	C	clear sky, bright Moon, mostly quiet night
D134	14/05/95	1223-2650	630	N	C	clear sky, bright Moon
D135	15/05/95	2008-2650	630	N	C	8/8 High Cirrus, bright Moon, mostly quiet
D137	17/05/95	1919-2650				FSLS Laser Scans
D138	18/05/95	1203-2700	630	N	C	clear sky, some aurora
D139	19/05/95	1229-2412	630	N	C	clear to cloudy, periscope off course 2412
D143	23/05/95	1904-2710	630	N	C	clear sky, some activity
D144	24/05/95	1152-2120	630	N	C	clear sky to blowing snow, moderate activity
D148	28/05/95	1224-2720	630	N	C	cloud 1/8, some activity at times
D149	29/05/95	1409-2720	630	N	C	clear sky, blowing snow, mostly very quiet
D150	30/05/95	1438-2720	630	N	C	clear night, moderate activity all night
D151	31/05/95	1121-2720	630	N	C	cloud 3/8, moderate to strong activity

June

D152	01/06/95	1156-2720	630	N	C	cloud 1/8, some activity
D153	02/06/95	1134-2730	630	N	C	clear night, moderate activity
D155	04/06/95	1416-2033	630	N	C	clear to start, blowing snow at 2033
D156	05/06/95	1407-2730	630	N	C	clear start, 8/8 cloud + blowing snow at end
D161	10/06/95	1149-2740				FSLS Laser Scans
D164	13/06/95	1532-0340	630	N	C	cloud 7/8 clearing to 1/8, mostly quiet
D165	14/06/95	1129-0340	630	N	Z	cloud 1/8 to 8/8, bright moon, mostly quiet

D166	15/06/95	1333-0340	630	N	Z	cloud 1/8 to 7/8, bright moon, mostly quiet
D167	16/06/95	1518-0340	630	N	Z	clear sky, some activity
D168	17/06/95	1203-0340	630	N	Z	clear to 7/8 cloud at end, mostly quiet
D169	18/06/95	1159-0340	630	N	Z	cloud 5/8, mostly quiet night
D170	19/06/95	1244-0340	630	N	Z	clear sky, quiet to moderate activity
D171	20/06/95	1301-0340	630	N	Z	clear sky, blowing snow, periscope problems
D174	23/06/95	1627-0350	630	N	Z	clear sky, Z only as periscope problems
D175	24/06/95	1230-0350	630	N	Z	clear sky, mostly quiet night, Z obs. only
D176	25/06/95	1207-0350	630	N	Z	clear sky, some activity at times

July

D183	02/07/95	1238-0340	630	N	C	clear sky. Mostly quiet, periscope malfunction
D184	03/07/95	1236-0340	630	N	Z	clear sky, too windy for C, mostly quiet night
D185	04/07/95	1105-0340	630	N	Z	clear sky, mostly quiet activity
D186	05/07/95	1118-0340	630	N	Z	clear to 8/8 cloud at close, very quiet
D187	06/07/95	1213-0340				FSLS Laser Scans
D197	16/07/95	1521-0330	835	N	C	clear sky, moderate activity at times
D198	17/07/95	1245-1858	835	N	C	clear to 8/8 cloud by 1400, periscope problems
D200	19/07/95	2011-0320	835	N	C	clear to 8/8 cloud ~0200, some activity
D203	22/07/95	1138-0320	835	N	C	3/8 cloud, mostly quiet, periscope problems
D205	24/07/95	1307-0320	835	N	Z	4/8 to 8/8 cloud at 0320, some activity
D206	25/07/95	1706-0310	835	N	Z	strong Winds, clear to 4/8 cloud, very quiet
D212	31/07/95	1258-0250	630	N	C	clear, mostly quiet, strong winds, p. probs.

August

D214	02/08/95	2010-0250	630	N	C	clear, some activity, p. probs. strong winds
D215	03/08/95	1247-0250	630	N	C	clear to 1247, 7/8 0250, probs. strong winds
D217	05/08/95	1310-0240	630	N	C	clear, mostly quiet, bright Moon
D218	06/08/95	1319-0240	630	N	C	3/8 cloud to 8/8 0240. bright moon
D219	07/08/95	1228-0240	630	N	C	bright moon, 7/8 until 2300. some activity
D220	08/08/95	1254-0230	630	N	C	clear to 8/8 at close, p. probs. strong winds
D222	10/08/95	1302-0230	630	N	C	clear sky, bright moon, mostly quiet
D223	11/08/95	1340-0230	630	N	C	clear sky, bright moon, some activity
D224	12/08/95	1305-0220	630	N	C	clear sky, mostly quiet night
D225	13/08/95	1309-0220	630	N	C	clear sky, some auroral activity
D227	15/08/95	1240-0210	630	N	C	8/8 cloud
D228	16/08/95	1315-0210	835	N	C	clear sky, mostly quiet night
D229	17/08/95	1310-2218	835	N	C	clear sky, shutdown by p. probs. strong winds
D230	18/08/95	1325-0200	835	N	C	1/8 cloud clearing early, some activity
D231	19/08/95	1329-0200	835	N	C	clear to 2/8 cloud at close, mostly quiet
D232	20/08/95	1405-0200	835	N	CZ	clear to 3/8, wind p. probs. change to
D233	21/08/95	1344-0150	835	N	CZ	clear, wind p. probs. change to Z, very quiet
D234	22/08/95	1328-0150	835	N	C	clear, some active aurora
D235	23/08/95	1333-0140	835	N	C	clear, mostly quiet night
D236	24/08/95	1333-0140	835	N	C	clear, mostly quiet, occasional aurora
D237	25/08/95	1338-0140	835	N	C	clear, mostly quiet except 20-21 and 22-00
D238	26/08/95	1345-0130	835	N	C	clear to 2/8 cloud at close, mostly quiet
D240	28/08/95	1349-0130	835	N	C	clear sky, some auroral activity

D241	29/08/95	1511-0120	835	N	C	clear to 8/8 cloud at close, mostly quiet
D242	30/08/95	1357-0120	835	N	C	clear sky. Quiet with moderate activity
D243	31/08/95	1353-0110				FSLS Laser Scans

September

D249	06/09/95	1447-0050	630	N	Z	6/8 Cloud, some active periods
D250	07/09/95	1425-0050	630	N	Z	clear, bright Moon, some active periods
D251	08/09/95	1334-0040	630	N	Z	clear, overcast at close, some aurora, moon
D252	09/09/95	1353-0040	630	N	Z	6/8 to clear at close, some active periods
D253	10/09/95	1426-0030	630	N	Z	clear, Moon, mostly quiet, active 2125-2200
D254	11/09/95	1435-0030	630	N	Z	clear sky, mostly active 1630-0000
D255	12/09/95	1441-0030	630	N	Z	3/8 to 6/8 at close, some auroral activity
D256	13/09/95	1437-0020	630	N	Z	5/8 to clear at close, average aurora
D257	14/09/95	1508-0020	630	N	Z	3/8 to 1/8 at close, moderate activity
D258	15/09/95	1502-0010	630	N	Z	clear, moderate activity most of night
D259	16/09/95	1548-0010	630	N	Z	clear, moderate to active aurora
D261	18/09/95	1741-0000				FSLS Laser Scans, problems with laser lock
D262	19/09/95	1530-2350	630	N	C	4/8 to clear at close, some activity
D263	20/09/95	1519-2350	630	N	C	1/8 to blizzard at close, mostly quiet
D269	26/09/95	1520-2330	630	N	C	7/8 to 2/8 at close, some auroral activity
D271	28/09/95	1638-2320				FSLS Laser Scans, problems with laser lock
D272	29/09/95	1616-2310	630	N	C	2/8 to 4/8 at close, wind p. probs., quiet
D273	30/09/95	1815-2310	630	N	C	1/8 cloud, wind p. probs., some aurora

October

D274	01/10/95	1650-2300	835	N	ZC	clear, some aurora, p. probs.
D277	04/10/95					FSLS Laser Scans
D278	05/10/95	1913-2244	835	N	C	clear to 6/8 cloud, some aurora, ZNS only
D279	06/10/95	1650-2250	835	N	C	8/8 cloud cleared, p. probs., ZNS only
D280	07/10/95	1642-2240	835	N	C	clear to 7/8, moderate aurora, ZNS only
D281	08/10/95	1650-2230	835	N	C	some cloud, moderately active, ZNS
D283	10/10/95	1700-2218	835	N	C	7/8 to clear, quiet night, ZNS
D284	11/10/95	1704-2200	835	N	C	clear. Mostly quiet activity
D285	12/10/95	1640-2150	835	N	C	8/8 cloud. Mostly quiet night

November

D333	29/11/95	FSLS Laser Scans

December

D341	07/12/95	FSLS Laser Scans, change over fibre coupler

8. BIBLIOGRAPHY

What follows is a bibliography of papers, theses, and unpublished material based on work done on the Mawson FPS. Papers from research on the Mt Torrens FPS are also included as much of the Mawson system is based on ideas published in these papers. If the title is not self-explanatory a brief comment is included to note the scope of the work.

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APPENDIX 1

A sample LOGG file follows. Some of the information may not be correct for the day used.

```
01
02
03 Mawson                ! location
04 Mark Conde            ! operators name/s
05 1984                  ! year
06 102                   ! day of year
07 Tuesday               ! day name
08 11/04/84              ! date
09 11                    ! day of month
10 April                 ! name of month
11 04                    ! number of month
12 00                    ! hour before start
13 24                    ! hour after finish
14
15
16
17 ATOMIC OXYGEN         ! name of observing species
18 630.0311              ! observing wavelength (nm)
19 15.999                ! atomic weight of observed species
20 11475.                ! order at observing wavelength
21 205.4                 ! channels per order at observing wavelength
22 104                   ! number of observations
23
24
25
26 NEON                  ! name of calibration species
27 630.47892             ! wavelength of calibration species (nm)
28 20.1797               ! atomic weight of calibration species
29 11439.                ! order at calibration wavelength
30 206.3                 ! channels per order at calibration wavelength
31 28                    ! number of calibration profiles
```

```
32 550.0                ! temperature of calibration source (K)
33
34
35
36 128                  ! number of channels
37 4.5                  ! field stop diameter (nm)
38 41.07                ! dark count rate
39 41.07                ! darks + leakage through obs filter
40 41.07                ! darks + leakage through cal filter
41 Oxygen 557.7 nm      ! filter 1
42 Neon 632.8 nm        ! filter 2
43 Oxygen 630.0 nm      ! filter 3
44 Oxygen 732.0 nm      ! filter 4
45 Open                 ! filter 5
46 Schott BG–18         ! filter 6
47
48
49
50                      ! 3 hourly Kp values
51                      ! 3 hourly Kp values
52                      ! 3 hourly Kp values
53                      ! 3 hourly Kp values
54                      ! 3 hourly Kp values
55                      ! 3 hourly Kp values
56                      ! 3 hourly Kp values
57                      ! 3 hourly Kp values
58                      ! total Kp
59                      ! Ap
60                      ! Cp
61
62
63                      ! local sunrise (decimal hours)
64                      ! local sunset
65                      ! observing altitude sunrise
66                      ! observing altitude sunset
67
68
```

```
69                  ! moonrise
70                  ! moonset
71                  ! lunar phase (days since new)
72
73
74
75 1030.            ! VCO offset r = 1000
76 1032.            ! VCO offset r =  300
77 1036.            ! VCO offset r =  100
78 1070.            ! VCO offset r =   30
79 1108.            ! VCO offset r =   10
80 1442.            ! VCO offset r =    3
```

APPENDIX 2

```
**************************************************
****          For analysing Hg profiles using FSLS
****          See FDS program library and subroutine
****          READ_GLOBOP for further details.
**************************************************
observation_keyword = drft
log_print = .false.
force_132_cols = .true.
observing_zenith_angle = 60.
chord_wavelength = 632.8
chord_channels = 256
insprof_source_wavelength = 632.81646
observing_reflective_finesse = 28.8
calibration_reflective_finesse = 38.3
deconvolve_insprof= .false.
skip_file_prompts = .false.
complex_plot_fonts = .false.
temperature_plot_min = 400
temperature_plot_max = 1500
intensity_plot_max = 80
time_plot_min = 10
time_plot_max = 30
```

APPENDIX 3

Contact names and addresses. Requests for data or collaboration should be addressed to Professor Peter Dyson or Dr Ray Morris in the first instance. If data or information is used or referred to in any publications appropriate acknowledgement should be given and/or authorship offered to those involved. Please circulate copies of papers or articles to those involved.

Professor Peter Dyson
Physics Department
La Trobe University
Bundoora Victoria 3083
Ph: (03) 9479 2735 Fax: (03) 9479 1552 email: p.dyson@latrobe.edu.au

Dr Ray Morris, Dr Pene Greet, Dr Damian Murphy, Dr John Innis and Mr John French
Atmospheric and Space Science
Australian Antarctic Division
Channel Highway
Kingston Tasmania 7050

Morris – Ph: (03) 62323 315 Fax: (03) 62323 496 email: ray_mor@antdiv.gov.au
Greet – Ph: (03) 62323 379 Fax: (03) 62323 496 email: pene_gre@antdiv.gov.au
Murphy – Ph: (03) 62323 359 Fax: (03) 62323 496 email: damian_mur@antdiv.gov.au
Innis – Ph: (03) 62323 361 Fax: (03) 62323 496 email: john_inn@antdiv.gov.au
French – Ph: (03) 62323 480 Fax: (03) 62323 496 email: john_fre@antdiv.gov.au

Dr Mark Conde
Geophysical Institute
University of Alaska
Fairbanks Alaska 99775-0800
Ph: 1-907 474 7558 Fax: 1-907 474 7290 email: conde@geewiz.gi.alaska.edu

Dr Gina Price
School of Biological and Environmental Sciences
Murdoch University
Murdoch Western Australia 6150
Ph: (09) 360 6125 Fax: (09) 310 4997 email: price@atmos.murdoch.edu.au

Norman Jones and Dr Paul Wardill
Coherent Scientific
116 Burbridge Road
Hilton South Australia 5033
Ph: (08) 8352 1111 Fax: (08) 352 82020 email: 100351.1471@compuserv.com