Chapter 3

USE OF OBSERVING TIME AND SCIENTIFIC PRODUCTIVITY

USE OF TELESCOPE TIME

The available observing time on the ING telescopes is allocated between British, Dutch and Spanish time allocation committees, the CCI International Time Programmes (ITP), service and discretionary nights, and scheduled stand-down and commissioning time.

The ING Board has delegated the task of time allocation to British astronomers to the PPARC Panel for the Allocation of Telescope Time (PATT), and to Dutch astronomers to the NFRA Programme Committee (PC). It is the responsibility of the Instituto de Astrofísica de Canarias (IAC) to allocate the Spanish time via the Comité para la Asignación de Tiempos (CAT). For committee membership see Appendix I.

The aim of the ING service observing programme is to provide astronomers with a way to obtain small sets of observations, which would not justify a whole night or more of telescope time. On the WHT several nights per semester are set-aside especially for this purpose. During those nights, ING support astronomers perform observations for several service requests.

Stand-down and discretionary nights are used for major maintenance activities, commissioning of new instruments, enhancements, calibration and quality control tests, etc., and partly for astronomy, for example, as compensation for breakdowns or for observations of targets of opportunity.

The way the available observing time on the ING telescopes has been shared in 2004 and 2005 is summarised in Table 1.

USE OF INSTRUMENTATION

Figure 44 shows the allocation of nights per instrument on the WHT in 2004 and 2005. As in previous years, the ISIS spectrograph was the most popular instrument, taking up some 40% of the scheduled observing time. Visiting instruments on the WHT during this period include the SAURON integral field spectrograph, the planetary nebula spectrograph, PN.S, the high-speed multi-CCD camera ULTRACAM, the near-IR multi-object spectrograph, CIRPASS, and the PLANETPOL photo-polarimeter. The INTEGRAL coherent fibre feed to the WYFFOS spectrograph is effectively operated as a private

	WHT		INT	
Time allocation	2004	2005	2004	2005
UK PATT	139	130	174	163
NL PC	49	56	61	63
SP CAT	77	78	104	100
ITP	8	14	8	14
TNG time share	10	11	—	—
Service	19.5	17	—	—
Instrument Builder’s Guaranteed Time	17	19	0	0
Stand-down and discretionary (including commissioning)	46.5	40	19	25
Total	366	365	366	365

Table 1. Number of nights allocated from Semester 2004A to 2005B. Service include UK and NL service time, and SP CAT includes Spanish service time.

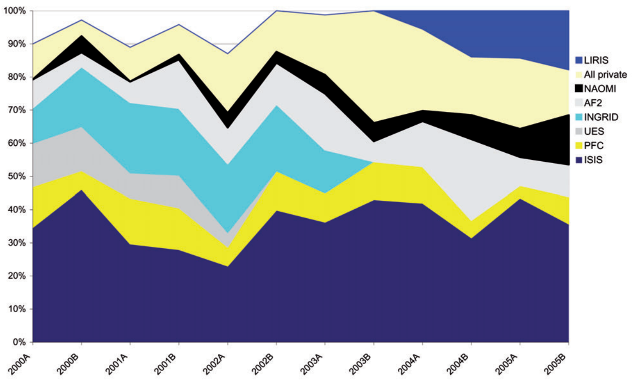

Figure 44. Use of WHT's instrumentation per semester.

instrument as well. In particular the ULTRACAM and PLANETPOL instruments enjoyed much interest.

On the INT, dark time periods were exclusively used for CCD imaging with the Wide Field Camera, as the INT was solely dedicated to wide field imaging programmes.

TELESCOPE RELIABILITY

During the year 2004 and 2005 the ING telescopes again performed very well, with downtime figures due to technical problems averaging at 3.4% and 1.5% in 2004 and 1.5% and 1.4% in 2005 for the WHT and the INT respectively. These figures meet the target value of a maximum of 5% technical downtime. Down time due to poor weather averaged 35% in 2004 and 34% in 2005. The historical trends of technical down time and weather down time are plotted in Figures 45 and 46. Figure 47 shows the seasonal average.

SCIENTIFIC PRODUCTIVITY

An important metric of the success of the ING telescopes is the number of publications published in refereed journals and for this reason the ING Bibliography (see

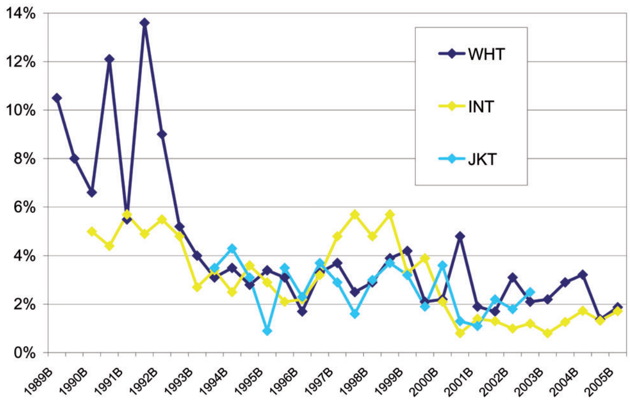

Figure 45. Technical downtime per semester.

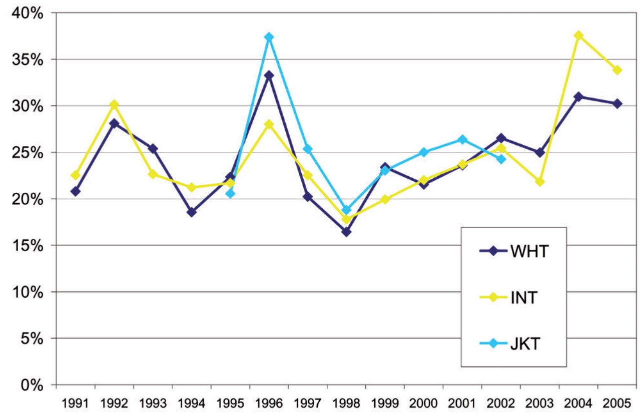

Figure 46. Weather downtime per year.

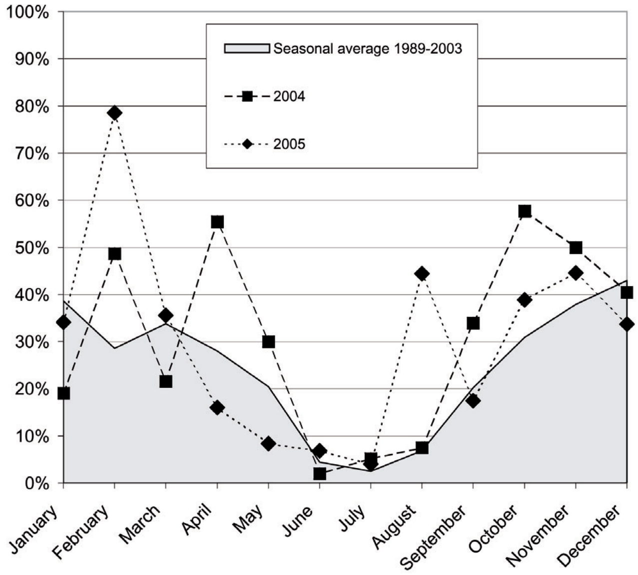

Figure 47. WHT's monthly weather downtime.

Appendix E) is updated annually. Traditionally, this bibliography has been compiled by visually scanning all articles in many journals and identifying those which make use of data from our telescopes. However most journals are now published electronically and often have quite sophisticated search engines associated with them and it is therefore appropriate to conduct the search with the help of these facilities.

Our selection process identifies papers that make direct use of observations obtained with the ING telescopes, in order to qualify. Papers that refer to data presented in earlier papers (derivative papers) are not counted.

When we analyse ING publications for the five years between 1995 and 1999 inclusive it can be seen that more than 95% of articles are published in a small number of core journals. These core journals consist of the British journal *MNRAS*, the American journals *Astrophys J*, *Astrophys J Letters*, *Astrophys J Suppl*, *Astron J* and *PASP*, plus the European journal *Astron Astrophys* (including the now defunct A&AS). We also include *Nature* and *Science* as core journals due to their perceived high impact. Journals making up the remainder of publications are widely spread among such journals as *Icarus* and the *Irish Astronomical Journal* to name a few. The bibliography for the years 2004 and 2005 was compiled from only the core journals listed above for reasons of efficiency. Search engines were used to select papers and the resulting list of papers visually inspected to ensure that they satisfied the selection criteria described above.

An analysis of these numbers follows (see Figures 48 to 52 and Table 2). Note that if a paper makes use of more than one telescope we count that paper for each telescope. Also, concerning perceived nationality we use the nationality of the first author's institution although in a few cases two institutions are credited. Similarly, if a paper makes use of more than one instrument, that paper is counted against each instrument.

Of all the available instruments on the WHT, the ISIS spectrograph remains the most productive instrument, with 42% of all publications during the reporting period. The number of papers from visitor instruments on the WHT also remained significant, with 16 papers over two years.

On the INT the papers are split very evenly between IDS spectrograph and the Wide Field Camera as might be expected from the split of observing time between these instruments, roughly 50-50.

Concerning the nationality of the first author's institution, there is little change, at least considering the fluctuations from year to year. The UK share is steady around 40%, and the Spanish share about 20%. The NL share also showed little systematic change. Interestingly, about one third of the papers have a first author from other countries, emphasizing the international character of the observatory and the high level of international collaboration between research groups.

THE ING ARCHIVE

All data taken with the ING telescopes is archived in the UK, at the Institute of Astronomy, Cambridge. The data archive is managed by the Cambridge Astronomy Survey Unit.

Archival data from the ING telescopes is made available to anyone upon request, after a one-year proprietary period.

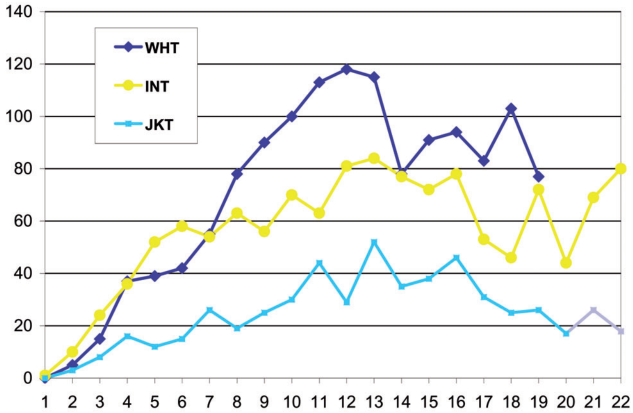

Figure 48. Number of refereed papers per telescope from first light year.

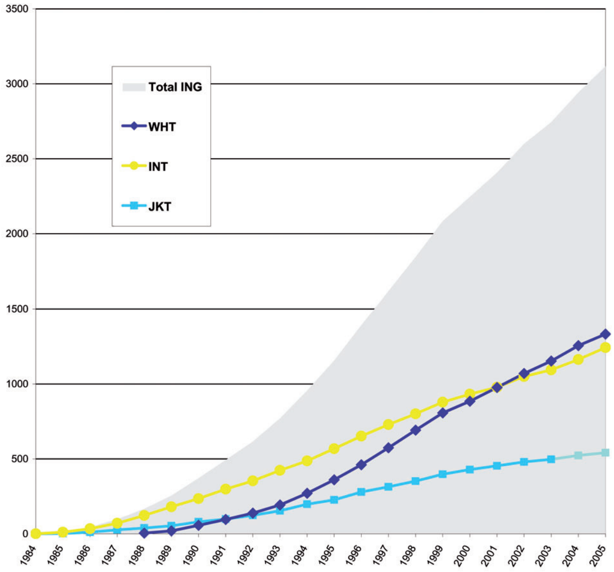

Figure 49. Accumulative number of refereed papers per year.

Year	WHT	INT	JKT	Total
1984	—	1	—	1
1985	—	10	3	13
1986	—	24	8	32
1987	—	36	16	52
1988	5	52	12	69
1989	15	58	15	88
1990	37	54	26	117
1991	39	63	19	121
1992	42	56	25	123
1993	55	70	30	155
1994	78	63	44	185
1995	90	81	29	200
1996	100	84	52	236
1997	113	77	35	225
1998	118	72	38	228
1999	115	78	46	239
2000	78	53	31	162
2001	91	46	25	162
2002	93	72	26	191
2003	82	44	17	143
2004	103	69	26	198
2005	77	80	18	175
Total	1333	1243	541	2743

Table 2. Number of refereed papers per year and telescope.

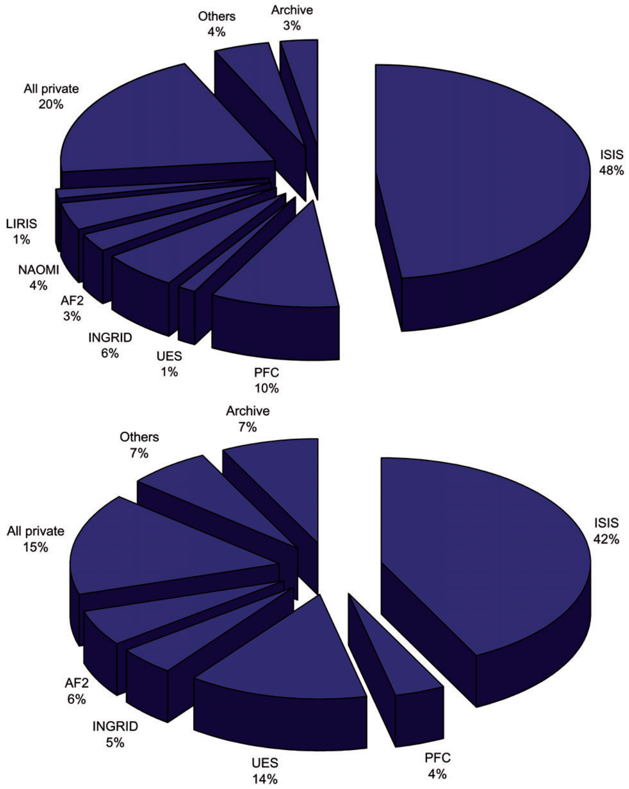

Figure 50. Top: Use of instrument data in WHT refereed papers in 2004. Archival papers made use of data from ISIS, PFIP, UES, INGRID and AUX. Bottom: The same in 2005. A total of 12 papers resulted from data obtained on service nights in both years.

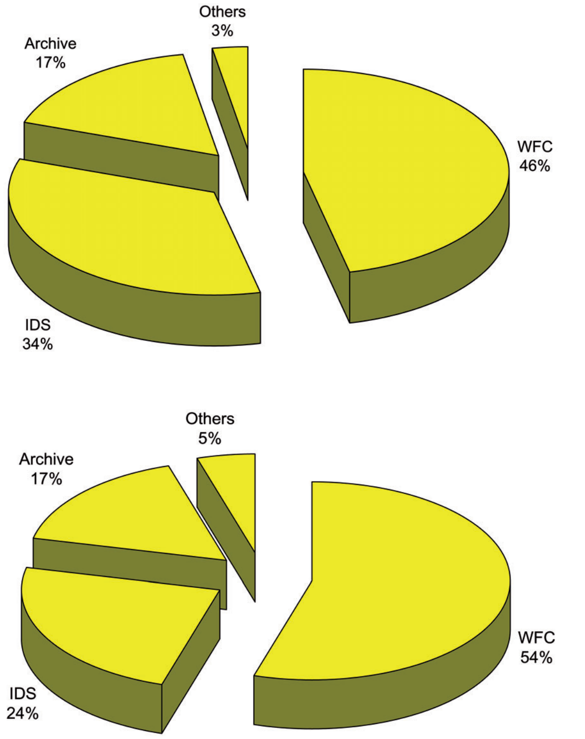

Figure 51. Top: Use of instrument data in INT refereed papers in 2004. Archival papers made use of data from the PFIP, WFC and IDS. Bottom: The same in 2005. A total of 6 papers resulted from data obtained on service nights in both years.

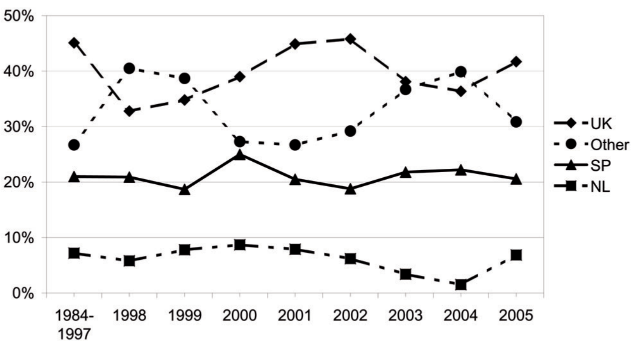

Figure 52. Evolution of the nationality of first author's first institution in ING refereed papers.

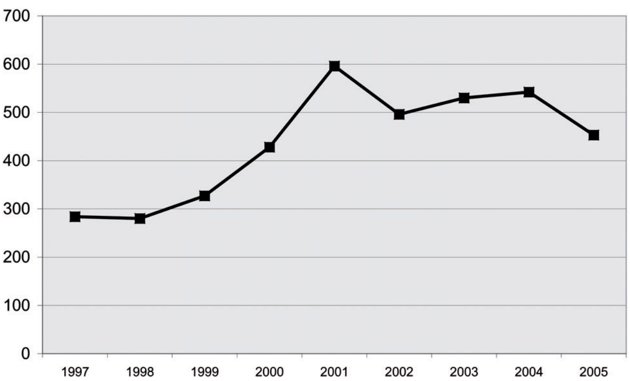

Figure 53. Number of ING archive requests per year.

The number of archive retrieval requests has remained high over the past two years, with over 500 requests per year, for retrieval of more than 40,000 data sets. The historic trend of the archive requests can be seen in Figure 53. This level of archive use underlines the importance of the ING archive as a general tool for astronomy research.