Chapter 3

USE OF OBSERVING TIME AND SCIENTIFIC PRODUCTIVITY

USE OF TELESCOPE TIME

The available observing time on the ING telescopes is divided 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 for British astronomers to the PPARC Panel for the Allocation of Telescope Time (PATT), and for 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 rapid and flexible tool for obtaining small sets of observations, which would not justify a full observing run. On the WHT several nights per semester are set-aside for this purpose. During these nights, ING support astronomers perform observations for service requests. During semester 2006A to semester 2007B, including a special call for adaptive-optics proposals in semester 2007A, 123 service proposals (total time 445 hours) were received, and 73 of those service proposals (total time used 257 hours) were completed.

Stand-down and discretionary nights are used mainly for major maintenance activities, commissioning of new instruments, enhancements, calibration and quality control tests, etc., and occasionally for observing science targets, for example, as compensation for time lost to technical problems or for observations of targets of opportunity.

The way the available observing time on the ING telescopes has been shared in 2006 and 2007 is summarised in the table below.

USE OF INSTRUMENTATION

The figure on the next page shows the allocation of nights per instrument on the WHT in 2006 and 2007. As in previous years, the ISIS spectrograph was the most popular instrument, taking up some 35% 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,

	WHT		INT	
Time allocation	**2006**	**2007**	**2006**	**2007**
UK PATT	135	129	158	164
NL PC	49	53	67	63
SP CAT	80	82	100	100
ITP	14	14	17	18
TNG time share	11	8	—	—
Service	13	27	—	—
Instrument builder's guaranteed time	1	—	—	—
Stand-down and discretionary time (including commissioning)	62	52	23	20
Total	366	365	366	365

Table 1. Number of nights allocated from semester 2006A to 2007B. Service include UK, NL and SP service time, and SP CAT includes Spanish service time on the INT.

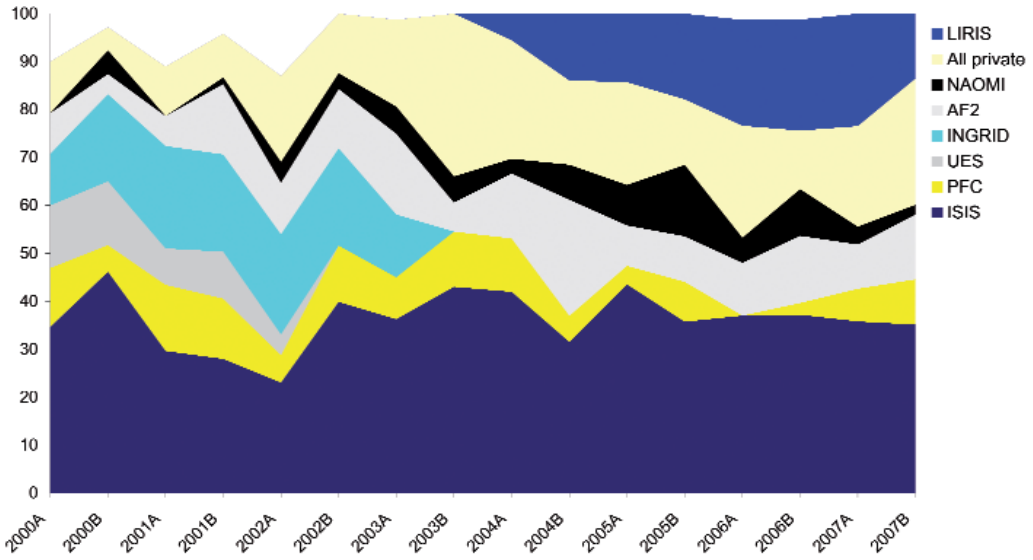

Figure 51. Percentage of use of WHT's instrumentation by semester. LDSS and TAURUS were decommissioned around 2000. NAOMI was first offered in semester 2000B and it is used in combination with INGRID, OASIS or OSCA. INGRID was not offered at the Cassegrain focus from semester 2003B. UES was decommissioned in semester 2002B. INTEGRAL was not offered during semester 2002B and is a visiting instrument from 2003A. LIRIS was first offered in 2004A.

the high-speed multi-CCD camera ULTRACAM, the PLANETPOL photo-polarimeter, the INTEGRAL coherent fibre feed to the WYFFOS spectrograph, and most recently, the GHaFaS Fabry-Perot imager. In particular there was much interest in ULTRACAM.

On the INT, the Wide Field Camera was used 73% of the time, while the Intermediate Dispersion Spectrograph, which came back into operation in August 2006, was used 27% of the available time.

TELESCOPE RELIABILITY

During 2006/07 the ING telescopes again performed very well, with downtime figures due to technical problems averaging at 1.5% and 2.3% in 2006A and B, and 2.8% and 3.5% in 2007A and B for the WHT and the INT respectively. These figures are well below the target value of a maximum of 5% technical downtime. Downtime due to poor weather averaged 20.5% and 25.9% in 2006 and 20.2% and 20.1% in 2007 for the WHT and the INT respectively. The historical trends of technical down time per semester and weather down time per year and month are plotted in the accompanying figures.

SCIENTIFIC PRODUCTIVITY

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

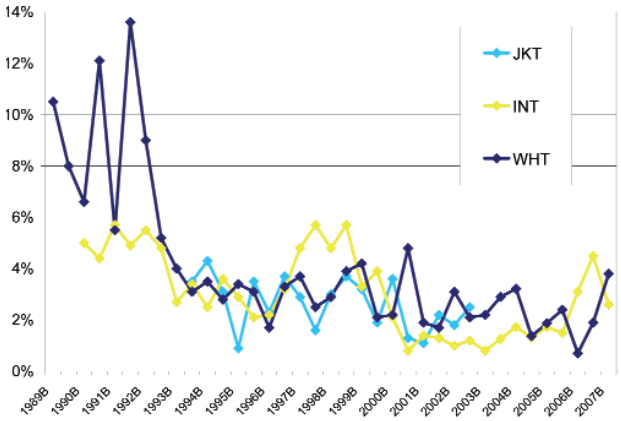

Figure 52. Technical downtime per semester.

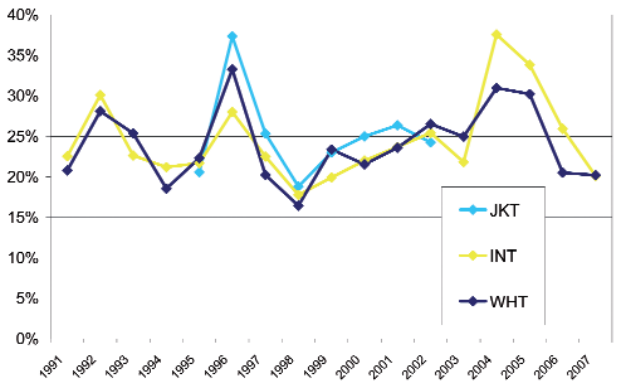

Figure 53. Weather downtime per year.

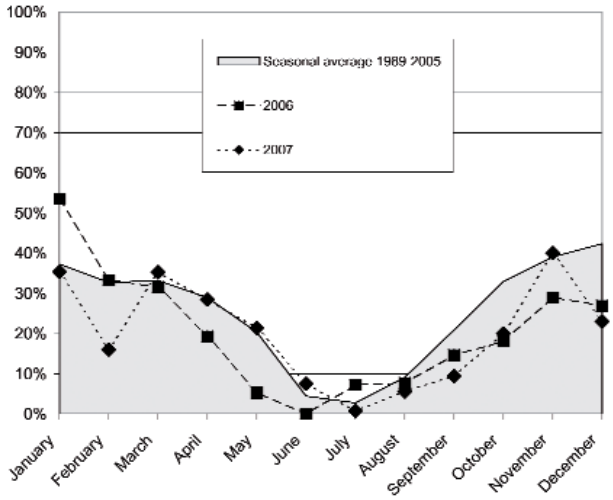

Figure 54. WHT's monthly weather downtime.

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 electronic publishing and sophisticated search engines make this task easier. Our selection process identifies papers that make direct use of observations obtained with the ING telescopes, in order to qualify for our publication list. Papers that refer to data presented in earlier papers (derivative papers) are not counted.

More than 95% of ING publications for the five years between 1995 and 1999 inclusive were published in a small number of core journals: the British MNRAS, the American ApJ, ApJL, ApJS, AJ and PASP, the European A&A, and Nature and Science. The remaining publications are dispersed among many other journals, e.g. Icarus and the Irish Astronomical Journal. The bibliography from 2002 onwards was compiled from only the core journals listed above, for reasons of efficiency. Search engines were used to select papers and the papers in the resulting list were checked to ensure that they satisfied the selection criteria described above.

An analysis of these numbers for 2006/07 follows. Note that if a paper makes use of more than one telescope we count that paper for each telescope. The nationality is taken to be that of the first author's institution, although in a few cases two or more 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, contributing to 40% of all publications during the reporting period. The

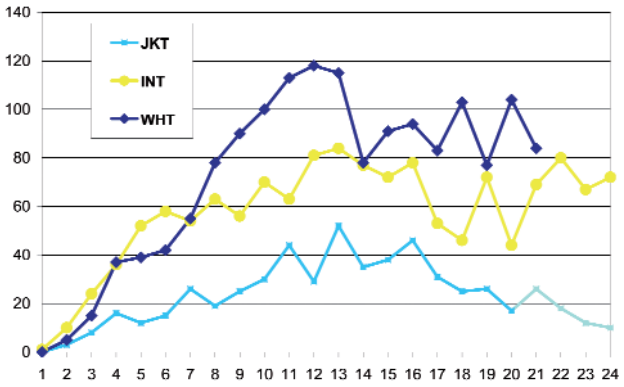

Figure 55. Number of refereed papers per telescope from first light year.

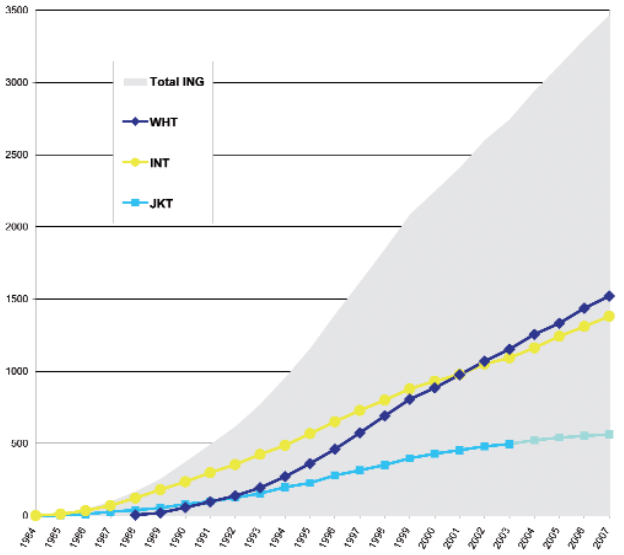

Figure 56. Cumulative number of refereed papers per year.

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
2006	104	67	12	183
2007	85	72	10	167
Total	1522	1382	563	3467

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

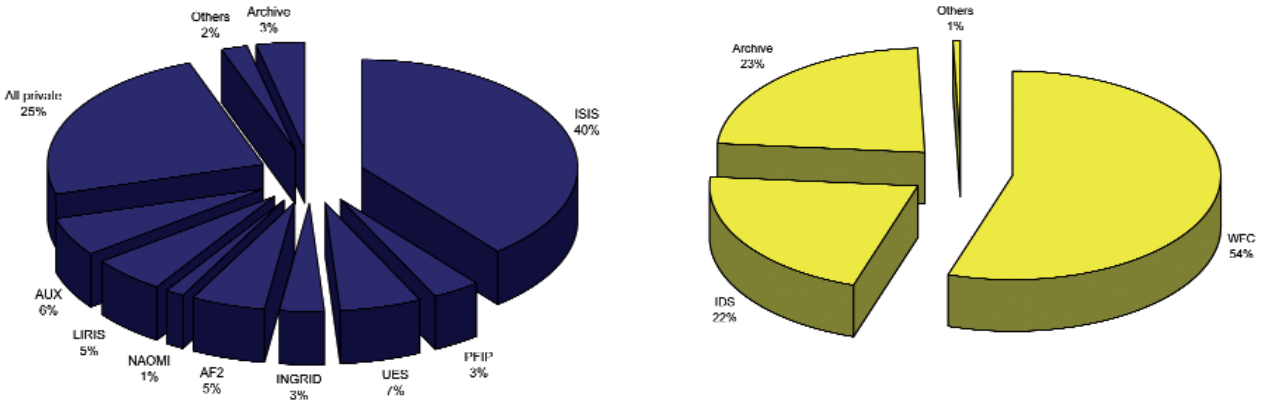

Figure 57. Left: Use of instrument data in WHT refereed papers in 2006 and 2007. Archival papers made use of data from the ING archive. Right: Use of instrument data in INT refereed papers in 2006 and 2007. Archival papers include data from the ING, INT WFS or IPHAS archives.

number of papers from visitor instruments on the WHT also remained significant, with 24% of the papers.

On the INT the papers are split between the WFC and the IDS spectrograph, in roughly the same ratio as the split in observing time between these instruments. Data from the ING archive, particularly from the WFS and IPHAS archives, have contributed significantly to the scientific productivity of the INT.

The distribution of the nationalities of the first author's institution changes little from year to year. The UK share is steady at 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, emphasising 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 are archived in the UK, at the Institute of Astronomy, Cambridge. The data archive is managed by the Cambridge Astronomy Survey Unit. The total amount of (compressed) data stored has passed the 26 Tb mark.

Archival data from the ING telescopes are made available to anyone upon request, after a one-year proprietary period. The number of archive retrieval requests increased significantly in 2006 and 2007, with over 700 requests for retrieval of more than 40,000 data sets. The historic trend of the archive requests can be seen in the accompanying figure. This level of archive use underlines the importance of the ING archive as a general tool for astronomy research.

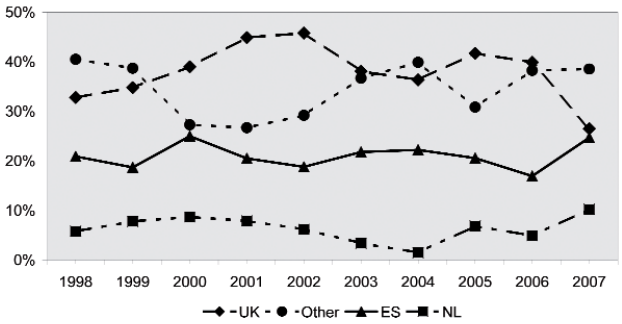

Figure 58. Evolution of the nationality of first author's main institution in refereed papers that used data from the ING telescopes.

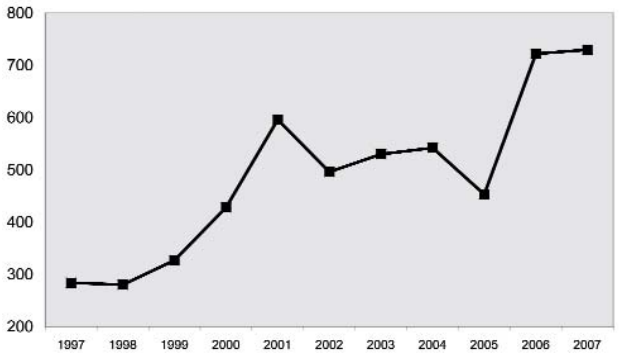

Figure 59. Number of ING archive requests per year.