on the importance of professionalism. State-of-the-art equipment might be better operated by experts in astronomical observations, rather than by astronomers visiting on short stays. Also, he stressed that the major cost in running an observatory is not due to the telescopes and the instruments, but rather to maintaining the infrastructure. Therefore for the year 2001, he advised to move (or replace) the La Silla telescopes to Paranal. Finally, on the subject of data archival, although agreeing with its necessity, he cautioned the community against doing like these scholars who, for centuries, only studied "archives" from the Antiquity...

In the present report, it is not possible to reproduce even coarsely the lively discussions that we had throughout the whole day. Enough to say that it was very difficult to keep on schedule! After all, these vivid exchanges were demonstrating the interest and motivation of the participants. The proceedings of this forum have been edited and are available on request to the organizers. They contain the contributions of all speakers and a complete transcription of the panel discussion.

The Sonneberg Plate Archive

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Sonneberg, until recently behind, and only a stone's throw away from the Iron Curtain, is no longer shut off from the outside world. Its observatory is restored to the international astronomical community, and the community ought to know what it has gained. Above all it now has access to the world's second largest plate archive and an intact photographic Sky Patrol. Its series of recordings reach back into the past as far as 1926. Sonneberg (240,000 plates) excels the Harvard collection (400,000 plates) in the continuity of its recordings and in the machine-readability of the archival data.

There is, however, a drop of bitterness. In the face of a present uncertainty about the future of Sonneberg Observatory, the IAU felt compelled to recommend, in a resolution of Commissions 27 and 42, that "all efforts be undertaken to continue these important measurements and to ensure the appropriate maintenance and availability of the data archives" (*IAU Inf. Bull.* **67**, 39–40 (1992)). In accordance with this recommendation, the Sonneberg team leaves no stone unturned in avoiding any gap and preventing a premature discontinuation, and is grateful for every support in its endeavour.

CCDs are advancing on patrols, and in the near future they will be big enough to take over after the photographic plates. But on no account must photography be discarded before a smooth transition is achieved. Then, once the CCDs can be used, patrols can be automated, and it is necessary to run them in a climate better than that in Central Europe. A new responsibility might then accrue to ESO, too.

Sky Patrols aim at providing a continuous record of the sky. Not only do they lead to discoveries of time-variable objects, but they allow the investigation of objects retrospectively. The first time the Sonneberg collection became a talking point was when, in 1937, the Minor Planet Hermes came extremely near to the earth and the Sonneberg patrol provided data for the orbital determination. Other instances, just to

Table 1: *List of fields regularly covered by the Sonneberg Field Patrol routine. R.A. and Decl. give the position of the field centres, N the number of plates archived.*

Coordinates (1950)			Coordinates (1950)			Coordinates (1950)		
R.A.	Decl.	N	R.A.	Decl.	N	R.A.	Decl.	N
$0^h06.5^m$	+58°52′	415	$6^h41.0^m$	+ 3°59′	344	$17^h66.8^m$	+29°15′	340
0 47.0	+40 48	409	6 51.8	+13 15	298	17 58.1	+ 2 56	373
1 06.9	+35 21	372	6 53.9	−16 59	260	18 18.1	+36 02	473
1 16.9	+57 58	403	6 59.5	− 5 39	226	18 41.5	+ 8 34	265
1 38.8	+29 48	325	7 31.5	−14 25	240	18 52.2	+27 51	243
1 57.8	+70 40	258	7 36.7	+ 5 31	240	18 53.8	+43 53	574
2 04.3	+23 14	159	8 05.4	−24 10	144	19 15.9	+53 17	298
2 06.6	+34 45	356	8 52.8	+ 6 08	413	19 23.0	+ 3 01	550
2 21.7	+56 23	313	9 29.5	+51 54	124	19 37.4	+30 02	424
3 02.0	+38 39	413	10 05.7	+12 13	184	19 43.9	+10 29	376
3 20.7	+49 41	349	11 06.9	+44 46	409	19 56.6	+19 21	432
3 51.0	+31 44	110	11 21.3	+10 48	470	20 01.8	+ 0 51	388
4 11.2	+48 17	259	11 38.2	+21 38	168	20 12.2	+56 25	371
4 24.3	+22 53	128	11 45.4	+20 30	353	20 19.5	+30 26	243
4 36.7	+39 42	271	12 09.6	+20 49	286	20 20.4	+40 06	346
4 52.1	+10 04	98	12 30.5	+10 34	315	20 35.2	+14 25	391
5 05.4	− 5 09	197	12 36.6	+21 20	289	20 56.5	+44 17	346
5 13.0	+34 15	233	12 51.0	+19 45	92	21 28.0	+70 20	130
5 34.2	+ 9 16	381	13 38.3	+20 12	292	21 32.1	+45 22	368
5 44.5	+17 43	301	16 28.1	+21 36	383	22 19.0	+46 17	495
5 50.2	+27 36	274	16 42.0	+34 08	736	22 21.6	+51 59	189
5 55.9	+44 57	440	16 55.3	+ 9 27	269	22 47.9	+65 05	221
6 03.9	−14 56	89	17 10.2	+45 23	199	23 08.9	+52 47	303
6 13.6	+12 17	233	17 22.0	+23 00	356			
6 26.0	+20 15	371	17 32.6	+12 36	318			Total: 22704

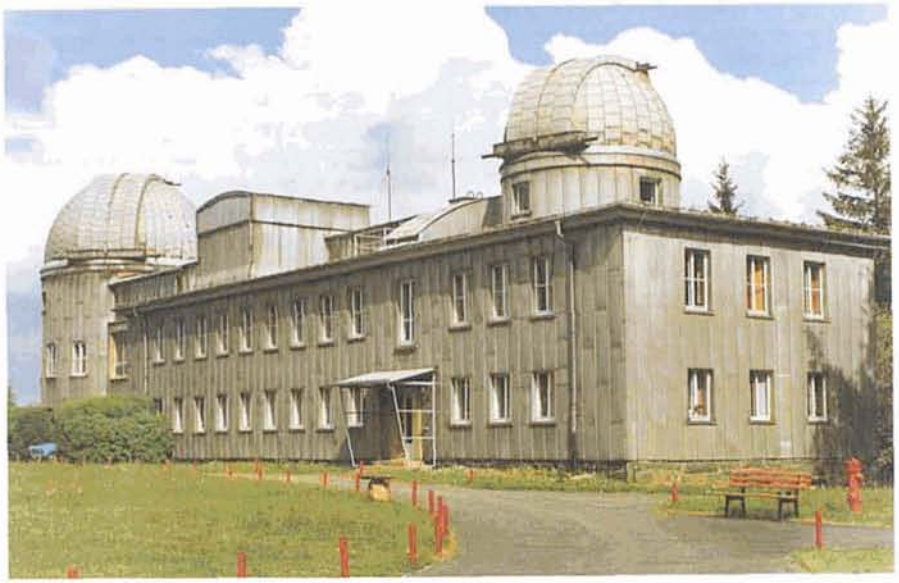

Figure 1: *The main building of the Sonneberg Observatory.*

Figure 2: *The sky patrol cameras.*

mention a few, were the quasar 3C273, whose light-curve – the first complete light-curve of a quasar ever to be established – was obtained mainly from Harvard and Sonneberg recordings, X-ray sources as the "Sonneberg X-ray star" HerX-1, or the two planetary nebulae NGC 2346 and 60-7°1. The nebula 60-7°1 (Catalogue of Perek and coll.) was to be a test case for stellar evolution, and its importance was compared to that of the Rosetta Stone for the decyphering of the Egyptian hieroglyphics. Its variability was discovered by C. Hoffmeister (Sonneberg; 1892–1968), who regarded it as being a variable star. In the late fifties G.A. Richter (Sonneberg) inspected recordings that had been made at Sonneberg in close succession since 1928 and, taking into account a few additional data from Cambridge/Mass. and Heidelberg from between the years 1890 and 1920, he recognized an exciting peculiarity. During the last 65 years the object had steadily grown brighter. Since 1890 it had risen 3.5 mag over its initial brightness of 13.2. The publication of its light-curve triggered a spate of investigations and subsequent theoretical studies all over the world. Among other things, high-resolution spectroscopy revealed that, from 1955 to 1976, its central star, FG Sge, had traversed the Hertzsprung-Russell diagram from the left (spectral type B4) to the right (spectral type G2) and that, in 1967, singly-ionized rare earths appeared, which five years later became so strong as to show about 25 times the solar abundance (Hoffmeister, Richter, Wenzel: Variable Stars, Springer-Verlag 1985).

It stands to reason that the existence of the Sonneberg plate collection is not due to mere waiting for unexpected events. It has been one of the cornerstones of the Sonneberg programme of variable star research. One quarter of all variable stars known in the Galaxy were discovered by means of its plates. The particular value of this collection consists in that it is an excellent stock of information for studying the long-term behaviour of active objects. Increasingly, it is supporting observations made from satellites at non-optical wavelengths. For the most part, though, the plates have been taken in the framework

Table 2: *Numbers of Sonneberg Sky Patrol plates taken during the last 30 years, distributed over 6 declination zones. Bars hatched: blue (pg), not hatched: red (pv). The petering-out of zone –20° is due to light pollution.* ▼

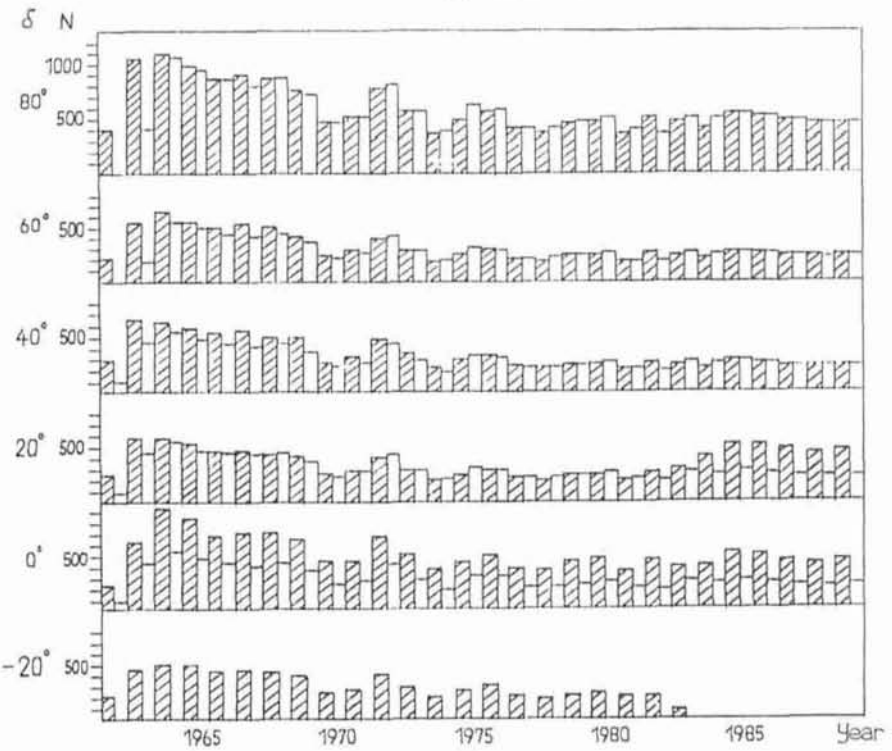

Table 3: *Cameras used by the Sonneberg patrols. The last column gives their years of service.*

	Plate limit	Field size	Plate dimension	Number of plates	Years
Schmidt Telescope 500/700/1720 mm	18.5 (B)	3.8° × 3.8°	13 cm × 13 cm	8900	since 1952
Astrographs					
400/1600 mm	17.5 (pg)	10° × 10°	30 cm × 30 cm	12200	1938 – 45, since 1961
400/2000 mm	17.5 (pg)	8° × 8°	30 cm × 30 cm	6900	since 1960
Sky Patrol					
14 cameras 55/250 mm	14.5 (pg)	26° × 26°	13 cm × 13 cm	93000	since 1956
	13.5 (pv)	26° × 26°	13 cm × 13 cm	51000	since 1958
Several instruments: formerly used					
Field Patrol				16000	
Sky Patrol				43600	
foreign				8400	
Total				240000	

of the Sonneberg Field Patrol (Felderplan) and the Sonneberg Sky Patrol.

The Field Patrol aims at recording, in every clear night, 81 fields selected along, or near the northern Milky Way with astrographs; it was started in the mid-twenties by C. Hoffmeister. Table 1 gives a list of the fields most regularly recorded, and the numbers of plates taken. The Sky Patrol – going back to an idea of P. Guthnick's (1879–1947) – is a programme covering the entire northern sky in two colours with 14 short-focus cameras on two mountings. Table 2 shows in diagrammatic form how the plates taken in blue (pg) and in red (pv) during the last 30 years are distributed over the declination zones. Details about the instruments are given in Table 3.

On May 1, 1992, the number of plates of the Sonneberg vault totalled 240,222, not counting about 1200 older plates of uncertain identity with respect to camera, time of exposure, or coordinates of the field, etc. The annual increase has been 4500 recordings on average.

About 80 % of the plate data are archived and retrievable. The 20 MByte database consists of record files, each record containing information on one plate such as date and time of exposure, object or field recorded, photographic emulsion, sensitivity, filters, state of the sky, observers' comments, etc., a number of auxiliary files, and programmes for management and user. For the digitization of the photographic information on the plates themselves, a made-to-order, time- and cost-saving configuration using a 12-bit CCD line scanner has been invented and tested in cooperation with the Institut für Theoretische Astrophysik of Tübingen University. Comparative measurements were performed at the Garching PDS of ESO. Operation at Sonneberg, however, has hitherto been stalled by hesitating custodians of public funds.

Although its plate vault is still lacking computer-aided measuring devices, visitors to Sonneberg Observatory are always welcome and can readily profit from its wealth of information using its conventional equipment. The small Sonneberg staff, severely pruned by recent reforms in former East Germany, are doing their best to become a fully-fledged member of modern society soon.

A Scrutiny of HD 62623 and HD 96446

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There has been a general consensus that CP A stars are all near-main-sequence objects. If so, the chemical peculiarity might be a valuable luminosity criterion, useful, for instance, in connection with optical soundings in the Milky Way. In reality, however, the situation seems to be a little bit too complicated for practical application. Firstly there is an awkward fact that a considerable amount of peculiar features observed in (upper main-sequence) stellar spectra already coincide with well-established luminosity-classification parameters – although in the "wrong sense", i.e. some spectral lines typical for CP stars, tend to show a positive luminosity dependence. Secondly, there is a non-ignorable number of stars, classified as both peculiar and giants, or even supergiants, particularly in the Michigan Catalogue.

In a series of previous contributions, the authors have made attempts to reclassify a selection of such objects in order to either confirm or refute the "double" or "contradictory" classification of them (Lodén-Sundman 1987, 1989, Lodén 1990). In no case the result became definitely conclusive, but, for certain objects, there was no indication whatsoever of any combination of peculiarity and high luminosity. Some of them behaved in an awkward manner indicating neither "traditional" peculiarity nor particularly high luminosity. Rather there might be reason to suspect a superposition of two spectra, the appearance of which could give reason to misclassify the luminosity or the attitude of chemical composition or both.

The main result of the investigation was that a possible admixture of peculiar A-type stars in the observational material does probably not imply any enhanced risk of distance misdetermination at optical soundings in the Milky Way.

Still, however, there are a few notori-