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Extremely Large Telescopes: Which Wavelengths?

Retirement Symposium for Arne Ardeberg

Torben E. Andersen
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Introduction

These proceedings are written versions of the presentations given at a retirement symposium 29–30 November, 2007, for Prof. Arne Ardeberg, who retired from Lund Observatory, Sweden, at the end of 2007. Arne played a major role in observational astronomy throughout the years, so we are happy that so many world-class specialists took part in the symposium.

During the last 10 to 15 years, Arne has been pushing for funding and construction of a European extremely large telescope. Arne had early focused on the dilemma that many of the scientifically interesting observation programs relate to wavelengths in the visible range, whereas full adaptive optics for an extremely large telescope today only seems feasible at wavelengths longer than about 1 μm. Much development work is in progress in the field, so it may be that the situation will change some years from now, but it is still unclear.

The issue is then whether it is optimal to push for an instrument portfolio focusing on diffraction-limited instruments in the K-band or on seeing-limited instruments in visible. The trend in Europe has been to focus on diffraction-limited instruments for the K-band, whereas seeing-limited instruments in the visible have been given more attention in the United States.

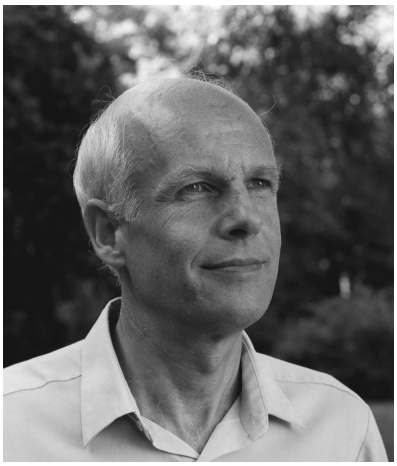
There may not be a clear answer to the question, but we have set up a symposium program hoping to cast some light on the issue. Not all presentations at the meeting were concerned with the wavelength issue, but a fair number of opinions were presented and we hope that these, together with many other considerations, will ease the choice of an optimal instrument portfolio for the new generation of extremely large telescopes.

Finally, I wish to thank the symposium secretary, Eva Jurlander, for her extraordinary efforts related to the practical arrangements, and Torbjörn Wiesel, for his highly efficient logistics support.

Torben Andersen

Arne Ardeberg

For many years, Arne Ardeberg has been a central person in astronomy in Lund and Sweden, and he has played an important role in international astronomical collaboration. Arne was "Staff Astronomer" at European Southern Observatory (ESO) in Chile from 1969 until 1973. In 1973, he received his PhD from Lund Observatory, where he was employed until 1979 when he became Director of the ESO La Silla Observatory in Chile — a post he held until 1984. Arne was appointed professor in Lund in 1980 and in 1984 he became Director of Lund Observatory and Vice-Dean of the Faculty of Science. He was also appointed Director of the Nordic institution, Nordic Optical Telescope Scientific Association (NOTSA), with a project group in Denmark undertaking design and construction of a 2.6-m optical telescope on La Palma. The telescope was completed in 1989, and is the largest telescope built in the Nordic countries. The project group in Denmark under Arne's directorship also designed a 32-m radio telescope placed on Spitzbergen, and carried out detailed design studies of a planned large solar telescope, LEST.



Arne continued as Director of NOTSA until 1995. In 1993 he took over the post as Dean of the Faculty of Science and held that position until 1998, when he became Pro-Vice-Chancellor of Lund University. Arne continued as Pro-Vice-Chancellor until 2002, when he returned to Lund Observatory. In 2004, he again took up his post as Director of Lund Observatory.

Arne was responsible for the ESO VLT Site Investigation in Northern Chile (1982–87), and served as a member of three related committees: the ESO Site Evaluation Committee (1984–89), the ESO Scientific-Technical Committee (1987–92), and the ESO Site Selection Committee (1988–91). From 2001 to 2004, he was chairman of the Euro50 Consortium Board, and is currently a member of the Joint European ELT Executive Committee, and serves as Deputy Project Leader of the Joint European Design Study Project.

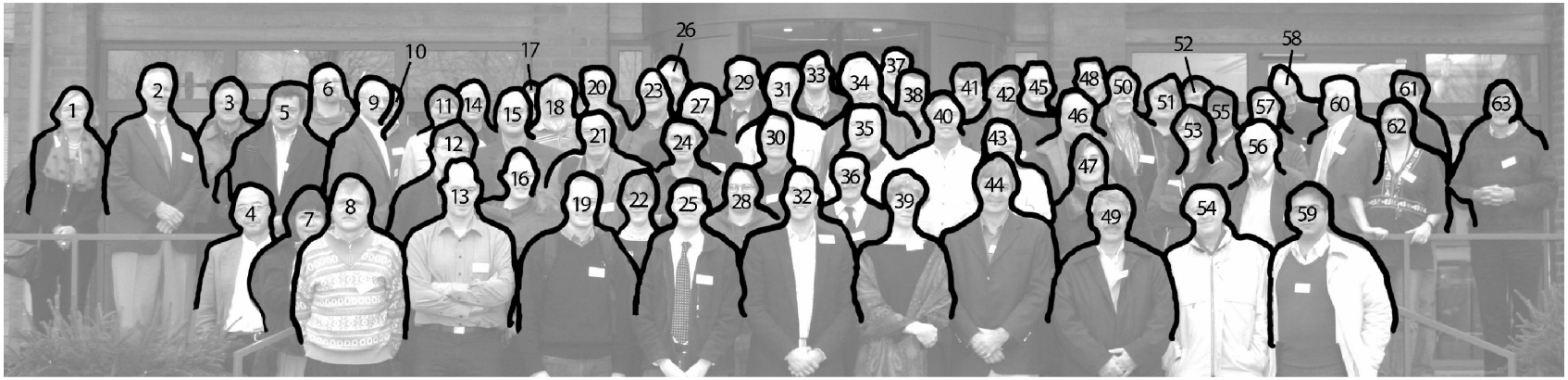
In 1993, Arne took the initiative to form a telescope group at Lund Observatory, and he has played an important role in the development of future extremely large telescopes (ELTs) with primary mirrors of 30–50 m. Arne and his colleagues in Lund were the first to present a conceptual design of an ELT (the Euro50). Arne and his institute have arranged several symposia and conferences within the field. It was at these meetings, with the world elite within telescope design, that many of the concepts of the ELT designs of today were laid out. On the political side, Arne has been one of the key entrepreneurs in reaching consensus in Europe on an ELT design, so that all ELT actors in Europe today are collaborating on joint objectives.

Arne is a member of the Royal Physiographic Society in Lund, the Royal Swedish Academy of Sciences, and the Royal Society of Sciences at Uppsala. Throughout the years, in spite of demanding managerial and political challenges, Arne has continued his deep interest in research. Arne is still a frequent author of scientific publications and has

authored and co-authored more than 250 scientific publications. We are happy that Arne is continuing as a part-time employee of our institute after his formal retirement.

The impressive results that Arne has achieved in his career are due not only to his exceptional talent within the field and his charisma and political sense of reality, but also to his unbeatable productivity and endurance. Arne is known for his willingness to assist any colleague in need of help. Perhaps not so well-known is the fact that Arne, in addition to his native Swedish, speaks English, German, French, Spanish and Danish fluently — and, he walks 24 km every day!


A S T R O N O M



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