Proceedings of the
Second Annual Lowell Observatory Fall Workshop

Solar Analogs:
Characteristics and Optimum Candidates

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Flagstaff, Arizona – October 5-7, 1997

Edited by Jeffrey C. Hall, Lowell Observatory

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Preface

On October 6 and 7, 1997, thirty-one scientists from around the world convened at Lowell Observatory in Flagstaff, Arizona, to discuss the scientific issues surrounding the topic of *solar analogs*: what stars are most similar to the Sun, how do we determine which ones they are, and why do we care? This topic has received intense scrutiny since the pioneering efforts of the late Johannes Hardorp, beginning with his first "The Sun Among the Stars" paper in 1978, and we felt it was an appropriate time to bring the many voices together and see what resulted.

The workshop was divided into two very different days. On Monday, eight invited speakers presented talks meant to provide attendees with a continuous train of thought, moving from the general characteristics of the Sun and stars, to our present broad picture of the Sun's place among the stars, to results for specific solar analogs. Eighteen contributed posters complemented the content of the talks.

In contrast, the Tuesday sessions were devoted entirely to debate. Individual panelists presented their opinions for evaluation by the workshop. Attendees then broke into five- to six-member working groups, considering specific issues relevant to the selection of solar analogs. In the concluding plenary session, the entire workshop evaluated the working groups' results and developed a modest consensus regarding the state of our knowledge in the area, and where we might best go from this point.

Since the workshop sessions were deliberately arranged to lead to a specific result, these proceedings have been arranged in the same way. Written versions of the talks appear first, followed by the poster contributions. These are then followed by the transcripts of the panel presentations and discussion, the results of the working groups' deliberations, and the plenary session.

We have preserved as much as possible the extensive discussion that formed the heart of this workshop. The debate was thoughtful and insightful; it was spirited without being hostile. Long, well-considered statements were interspersed with humorous quips. The spoken word differs greatly from the written word, and we have tried to preserve that difference in the transcripts in these proceedings. Perhaps readers will benefit from peering inside the extemporaneous flow of ideas that meanders through a two-day scientific conference such as this one.

On Monday, we had lunch on the Lowell campus lawn, enjoying warm sunlight and a horizon-to-horizon-blue Arizona sky; during Tuesday morning's panel discussion, we almost had to raise our voices to be heard over the din of a howling, wind-driven cloudburst pounding on the roof. Our workshop had a bit of everything, and we think some interesting science resulted.

And by the way, Andrea Dobson won the granule count contest.

Jeffrey Hall
Lowell Observatory
February 23, 1998

List of participants

Thomas R. Ayres, panelist (University of Colorado)
Sydney Barnes (Lowell Observatory)
Derek L. Buzasi, panelist (Valdosta State University)
Giusa Cayrel de Strobel, invited speaker (Observatoire de Paris-Meudon)
Christopher Corbally (Vatican Observatory)
Conard Dahn (U. S. Naval Observatory/Flagstaff)
Andrea K. Dobson (Whitman College)
Otto G. Franz (Lowell Observatory)
Eileen D. Friel (National Science Foundation)
Robert F. Garrison, panelist (University of Toronto)
Mark S. Giampapa, invited speaker (National Solar Observatory / NOAO)
Irina N. Glushneva, invited speaker (University of Moscow)
Will Grundy (Lowell Observatory)
Manuel Guedel (Paul Scherrer Institute)
Edward F. Guinan, invited speaker (Villanova University)
Jeffrey C. Hall (Lowell Observatory)
Karen L. Harvey, invited speaker (Solar Physics Research Corporation)
Gregory W. Henry (Tennessee State University)
Stephen M. Henry (Tennessee State University)
Robert F. Howard (National Solar Observatory)
William C. Livingston (National Solar Observatory)
G. Wesley Lockwood (Lowell Observatory)
Gustavo F. Porto de Mello (Universidade Federal do Rio de Janeiro)
Richard R. Radick, invited speaker (Air Force Research Laboratory)
Gary J. Rottman, invited speaker (University of Colorado)
David G. Schleicher (Lowell Observatory)
Brian A. Skiff (Lowell Observatory)
David R. Soderblom, invited speaker (Space Telescope Science Institute)
Benjamin J. Taylor (Brigham Young University)
Richard A. Wade, panelist (Pennsylvania State University)
O. R. White, plenary session moderator (High Altitude Observatory)