
THE BEATENBERG DECLARATION, 1994

On the initiative of Switzerland and the European Space Agency, representatives from space agencies, scientific institutions and industry from around the world met in Beatenberg, Switzerland from 31 May to 3 June 1994 to consider plans for the implementation of internationally coordinated programmes for robotic and human Lunar Exploration.

Following the Beatenberg Declaration on 3 June 1994 (see ilewg.jsc.nasa.gov/ILEWG/btnbg.html), space agencies from all over the world met in Hamburg, Germany at the EGS Moon Workshop (3-7 April, 1995) and in full agreement decided to create an International Lunar Exploration Working Group (ILEWG). As established in their charter, this working group includes representatives from many major space agencies around the world and is charged with developing an international strategy for the exploration of the Moon.

One of the first tasks of ILEWG was to establish a communication mechanism. An ILEWG web page is maintained at LPI Houston (ilewg.jsc.nasa.gov/).

Our goal is to becoming an information exchange center for potential and real future lunar robotic and human missions, as well as for new scientific and resource information about the Moon.

THE ILEWG CHARTER, HAMBURG 1995

The charter of ILEWG is:

- 1. To develop an international strategy for the exploration of the Moon.
- 2. To establish a forum and mechanism for the communication and coordination of activities.
- 3. To implement international coordination and cooperation.

In order to facilitate communication among all interested parties ILEWG agrees to establish an electronic communication network for exchange of science, technology and programmatic information related to lunar activities.

All interested space agencies will appoint two or three members. A chairperson is selected among the ILEWG members every two years.

ILEWG will meet regularly, at least once a year, and will lead the organization of an International Conference every two years in order to discuss the state of lunar exploration.

Formal reports will be given at COSPAR meetings.

THE ILEWG 2ND CONFERENCE, KYOTO 1996

The 2nd ILEWG conference took place at Kyoto on 14-18 October 1996 under the ILEWG chairmanship of H. Mizutani (ISAS). The declaration of the 2nd ILEWG workshop addressed with working groups (WG) various aspects of lunar exploration and utilization:

- the WG "Science of the Moon" identified "Origin of the Moon and evolution of the Earth/Moon system" as principal underlying theme for defining a strategy for scientific exploration;
- the WG "Science from the Moon" emphasized near term technology demonstrations on the lunar surface that could prepare to future astronomical instruments;
- the WG "Utilization of Lunar Resources and Environment" stressed the role of the Moon as testbed for using local resources in the solar system;
- the WG "Lunar Infrastructure Development" defined further a four-phase approach for an international lunar program.

The workshop participants were enthusiastic about the progress made since Beatenberg in the first phase of lunar programs, and note the increasing importance of international cooperation and coordination.

THE ILEWG 3RD CONFERENCE, MOSCOW 1998

The 3rd International Conference on the Exploration and Utilization of the Moon, organised under ILEWG chairman E. Galimov, took place on October 11-14, 1998, Moscow, Russia. It addressed in particular the following topical areas:

- The Moon as a testbed for exploration of the solar system. Establishment of a permanent lunar infrastructure. New technology and engineering related to lunar studies.
- Utilization of lunar resources.
- Environmental protection aspects of human expansion to the Moon.

We give the declaration from the 3rd ILEWG conference:
ILEWG Recommendations for Lunar Exploration

THE ILEWG 3RD DECLARATION, MOSCOW 1998

"The Third International Lunar Conference was held on 11-14 October 1998 in Moscow, Russia under the auspices of the International Lunar Exploration Working Group (ILEWG) and hosted by the Vernadsky Institute and the Russian Academy of Sciences. Director-general of the Russian Space Agency Dr. Yr. N. Koptev and Vice President of the Russian Academy of Sciences N. P. Laverov in their salutatory speech recognized the actuality and scientific importance of exploration and utilization of the Moon, as embrace by the participants.

Discussions and presentations by 236 scientists from 12 countries focused on science results and technical return from exploration of the Moon and utilization of lunar resources. The participants express gratitude to the Organizing Committee for the opportunity during the Conference to visit industrial and scientific institutions where spacecraft and rockets are built.

After a pause of two decades, the recent return to the Moon is highly productive. Participants of the Third ILEWG Conference were enthusiastic about the analysis of Clementine data and the results from the Lunar Prospector. New discoveries have opened additional avenues for lunar exploration such as: the dramatic character of giant basins (e.g., South Pole-Aitken), possible water ice at the poles, and local concentration of radiogenic elements.

Lunar studies are essential to understanding of our planet Earth, because the Moon and the Earth have been dynamically and chemically connected from birth. Furthermore, the Moon retains a record of the most ancient geological events in our part of the solar system. From the continuous lunar meteoroid impact history, we can further understand the Earth bombardment history and its key role in the origin and evolution of life.

Lunar exploration is an integral part of long-term efforts of human activities into the solar system. The latest developments in technology can be tested on the Moon: miniaturization and instrument technologies from orbit and in situ; launching, transportation and navigation systems; new methods for data communication, teleoperations and telepresence; technologies for deployment, rover and extended robotic activities; exploitation and utilization of resources while preserving the pristine character of the lunar environment; preparation for human outpost (life support systems, habitat, protection); and scenarios for expansion of solar system exploration for the benefit of humanity.

Participants recognize challenging expectations from approved future lunar missions. The Japanese penetrator mission Lunar A is to be launched in 1999, the ESA SMART-1 mission using solar electric propulsion to the Moon is to be launched in 2001, the Japanese mission SELENE to be launched in 2003 will carry a sophisticated set of orbiter instruments and a technology lander. Dissemination and utilization of mission data from Clementine, Lunar Prospector, Lunar-A, SMART-1, and SELENE were discussed, and world-wide participation is needed in lunar research and for preparing the second phase of the Lunar Initiative.

The participants value highly the Russian Lunar Project discussed at the Conference. This project intends to obtain information on the internal structure of the Moon, which is of great importance. The Conference participants encourage Russian scientists, engineers, and the Russian Space Agency to implement this challenging project.

For all the lunar missions, exchanges of project investigators and later exchange of mission data, are strongly encouraged. The ILEWG participants recommend that the space agencies coordinate the exchange of mission information and data return using uniform standards.

The ILEWG and the world lunar research community reconfirmed its responsibility to promote the international exploration of the Moon into the next millennium, building a bridge to a promising era for humanity on and beyond the Earth.

The next ILEWG Lunar International Conference will be held in Europe in 2000."

TOWARDS THE 4TH ILEWG CONFERENCE, 2000

The 4th ILEWG conference, organised under ILEWG chairman B. H. Foing (ESA) and co-chairman M. Duke (LPI) will be timely to review:

- Recent results and key issues in lunar science
- Status and preparation of approved lunar missions
- Demonstration of technologies from lunar orbit and from surface landers and robotics
- Role of the Moon in preparing human activities in the solar system

We shall discuss at LPSC99 how to implement the ILEWG recommendations in order to optimize the analysis of current lunar data sets, how to implement the exchange of information between agencies, how to coordinate the currently approved lunar missions, how to promote lunar science and exploration, how to prepare joint international undertakings in the next phases of lunar exploration.

We acknowledge ILEWG members and participants to the ILEWG conferences and support activities for their dedication to promote the international exploration of the Moon into the next millenium.