



NASA ASTROBIOLOGY INSTITUTE ANNUAL REPORT YEAR [July 2002 - June 2003]



Intl. Partners: European Exo/Astrobiology Network Association, EANA

European Exo/Astrobiology Network Association, EANA Executive Summary Director/Leader: André Brack

The European Exo/Astrobiology Network Association, EANA, was created to co-ordinate the different European centres of excellence in exo/astrobiology or related fields already organised in national networks. The specific objectives of EANA are to bring together European researchers interested in exo/astrobiology programmes and to foster their cooperation, to attract young scientists to this quickly evolving interdisciplinary field of research, to interface the Network with European bodies such as ESA, ESF, and the European Commission, and with non-European institutions active in the field, and to popularise exo/astrobiology to the public and to students. The EANA includes presently 12 European nations active in the field: Austria, Belgium, Denmark, France, Germany, Italy, Portugal, Spain, Sweden, Switzerland, The Netherlands, and United Kingdom.

EANA is affiliated with the NASA Astrobiology Institute. The formal affiliation was signed in September 2002 at the Graz Workshop by Rosalind Grymes, Deputy Director of NAI, during a reception hosted by the Governor of Syria in the historical Eggenberg Castle.

Recent activities (activities of CAB, GDR Exobio and UKAN will be reported separately)

Second European Workshop on Exo/Astrobiology

The Second European Workshop on Exo/Astrobiology was held in Graz, Austria, 16–19 September 2002, co-organised by EANA and the University of Graz and the Institute of Geophysics, Astrophysics and Meteorology. Attended by 320 participants, the workshop was oriented towards planetology. The scientific input of the Graz meeting was published as ESA SP-518.

Swedish Astrobiology Network, SWAN

SWAN held two national meetings, in GQteborg 1 October 2002 and in Örebro 17 March 2003. Discussions were primarily on how to promote astrobiology through joint courses in Sweden and on relations with EANA and the International Astrobiology Circle members.

European Commission COST Action

Within the framework of EC COST Actions to foster co-operation in a specific research area, the First COST D27 Workshop "Origin of life and early evolution" was held in Ravello, Italy, 17–20 October 2002. Approximately 70 participants took part in what was a very successful "kickoff" activity of the

group. Sessions were organized on prebiotic chemistry and chirality, astrobiology and early molecules, ribonucleic acid (RNA), cooperativity, self-replication, autocatalysis, and prelude to the Cell. The proceedings of the workshop will be published as a special issue of *Origins of Life and Evolution of the Biosphere*.

ISSI. International Space Science Institute activities in Astrobiology

The International Space Science Team "Prebiotic matter in space" is a consortium of 12 scientists, each representing a specific research field crucial to revealing the origin of life as a consequence of the evolving Universe. The ISSI Astrobiology team organized a workshop at the International Space Science Institute in Bern, Switzerland, between April 1–4, 2003 on the topic "Astrobiology – Future perspectives". The workshop was restricted to 35 top experts. The meeting results will be published in a book by Kluwer Academic Publisher in spring 2004.

EGS–AGU–EUG Joint Assembly in Nice

Several sessions at the European Geophysical Society – American Geophysical Union – European Union of Geosciences (EGS–AGU–EUG) Joint Assembly in Nice, France, from April 6 – 11, 2003, dealt with astrobiological topics. The session "Life on the fringe: biotic survival over geological time scales and in subglacial environments" was attended by about 75 participants. A special issue of "Astrobiology" will feature several keynote papers. The session "Water and life" was also very successfully attended by more than 70 participants. Many of the papers presented will be published in a Special Issue of the *International Journal of Astrobiology*. Darwin/TPF and the search for extrasolar terrestrial planets The conference, held in Heidelberg, Germany, 22–25 April 2003, was attended by about 200 participants. The topics covered included: Results of Planet Searches, New Search Strategies, Formation and Evolution of Planetary Systems, and Conditions for Life. Proceedings are currently in press in the ESA–SP series.

Beagle 2

Beagle–2, the UK led exobiology lander of the European Space Agency (ESA) 2003 Mars Express mission, comprises an integrated suite of instruments to optimize the search for evidence of life on Mars in subsurface and rock interior samples. The package includes instruments to study sample mineralogy (composition, macroscopic and microscopic structural and textural features), organics (elemental, molecular), oxidation state and petrology (major and minor element composition). Environmental characteristics will also be measured (atmosphere, radiation budget, temperature, pressure, wind speed and direction, humidity, dust activity). Launched on June 2, 2003, Beagle 2 will be operating on Mars in December 2003.

Future activities and objectives

The Third European Exo/Astrobiology Workshop will be hosted by the Centro de Astrobiología in Madrid, November 18–20, 2003. The Workshop will be dedicated to the search for life on Mars.

The following objectives will be pursued:

- to enlarge EANA to other European countries active in Exo/Astrobiology, i.e. Finland, Hungary, Poland, Romania, and Russia
- to interface the Network with European bodies such as ESA, ESF, the European Commission and with non-European institutions active in the field
- to promote the Federation of Astrobiology Organisations, FAO
- to popularise Exo/Astrobiology to the public and to students

General publications

- Exo/Astrobiology, Proceedings Second European Workshop on Exo/Astrobiology, Graz 2002, Ed. H. Lacoste, ESA Special Publication ESA SP-518 (2002). "Astrophysical and Astrochemical Insights into the Origin of Life", Reports on Progress in Physics 65, 1427-1487 (2002), co-authored by the ISSI Team members.

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