

Intimate Science

*Frank J. Malina and
Gyorgy Kepes*

*Dedicated to International Cooperation and the
Peaceful Uses of Outer and Inner Space*

*Roger F Malina
The Pleasure of Light
Ludwig Museum Sept 3 2010*

A talk in two parts

1) FJM 2) GK:

The New Landscape in Art and Science



A childhood dream

- *« Can man do what he can imagine ?*

Now that man has conquered travel through the air his imagination has turned to interplanetary travel.... »

- ***Frank J Malina***

- Texas A and M English technical essay 1933

In October 1936 in the Arroyo Seco Behind Caltech.....



- ***Frank J Malina***
- ***John W Parsons***
- ***Edward S. Forman***
- ***A.M.O. Smith***
- ***Tsien Hsueh-Shen***

Theodore von Karman



First Success of the “suicide squad”
JATO development



First Failure: ***Hydrobomb Development***



October 11 1945

White Sands Missile Range



- **The WAC Corporal reached an altitude of 235,000 feet
25 pounds payload**

**R.F.Nitric Acid-
Aniline**

**The childhood dream
realised**

WAC CORPORAL CREW

WATER BARRAGE A.S.P.
SEPT. 1942

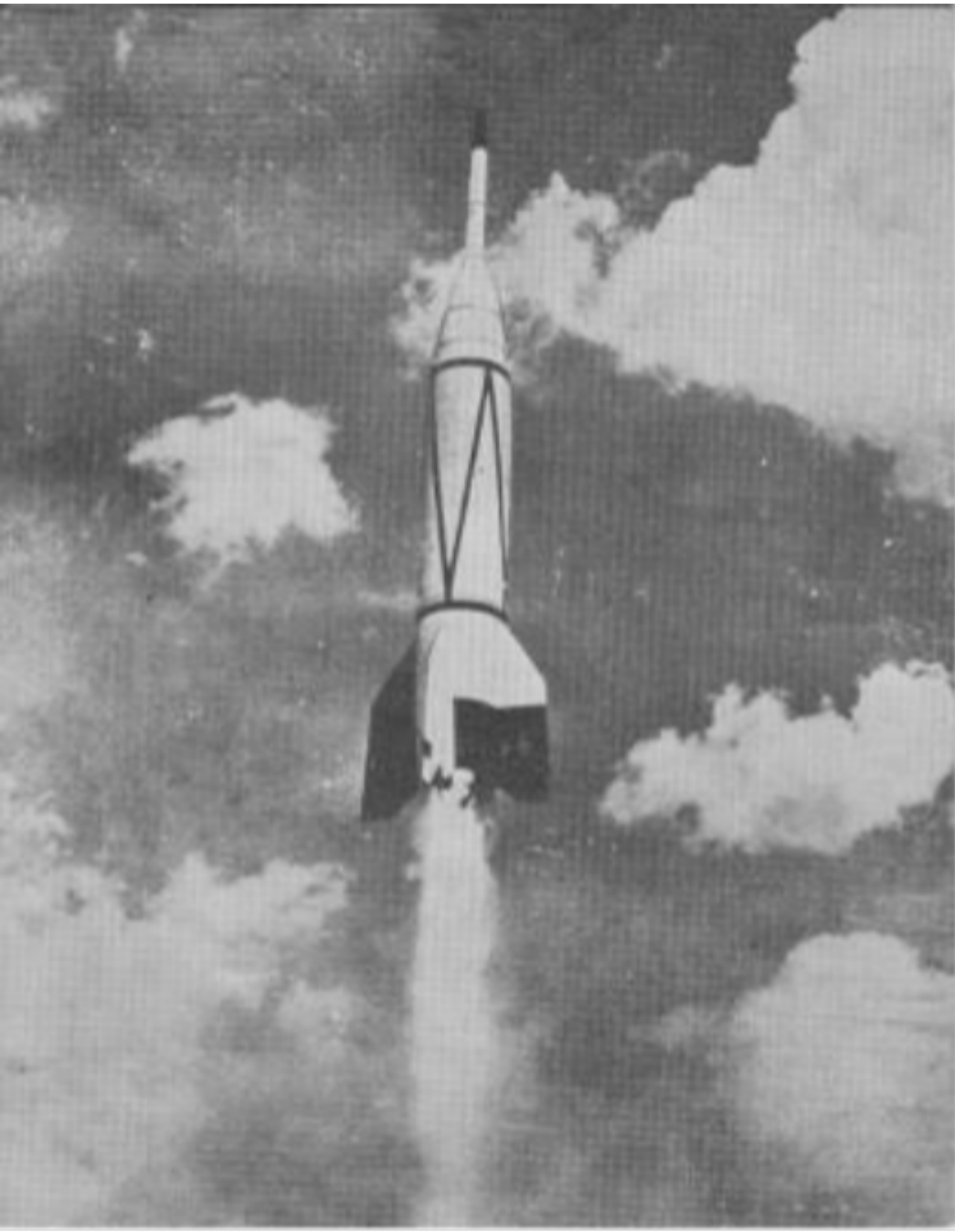


Proposal for Escape from the Earth

- 1945 Navy contract to JPL for earth satellite
- *Malina-Summerfield criterion for «step rockets»*
- Proposed 3 Jan 1946 to War Equipment Board of the Army
- *Proposed Cosmic Ray experiment*
- Presented to BIS London 1947

- Navy dropped program in 1947
- US Army had captured Von Braun.....

BUMPER WAC: 24 Feb 1949



- **On 24 July 1950 a BUMPER WAC was first launch from Cape Canaveral**
- **Reached 244 miles**

The Founding of NASA JPL Jet Propulsion Laboratory



***GALCIT ORDCIT
Project No 1
1941***

***Changed name
to JPL 1943***

***Th V Karman
And Frank
Malina Co
Founders***

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UNESCO

- Invited by Julian Huxley to join the founding team
- 1946-53
- Deputy then Dir for Science
- Hylean Amazon
 - Negev Desert
 - UNESCO congresses
Algeria, India, Prague ...
 - The Macarthy Investigators purged the UN Agencies



Kinetic Artist

- **First art and technology show 1955**
- **Lumidyne System**
- **Interactive art= sound triggering images**
- **ELI Company**

- **Pioneer of Kinetic Art movement**



International Academy of Astronautics



- **Founding member**
- **Served as President 1963**
- **1961 IAA Lunar International Laboratory Com**
- **Manned Research on Celestial Bodies Comm**



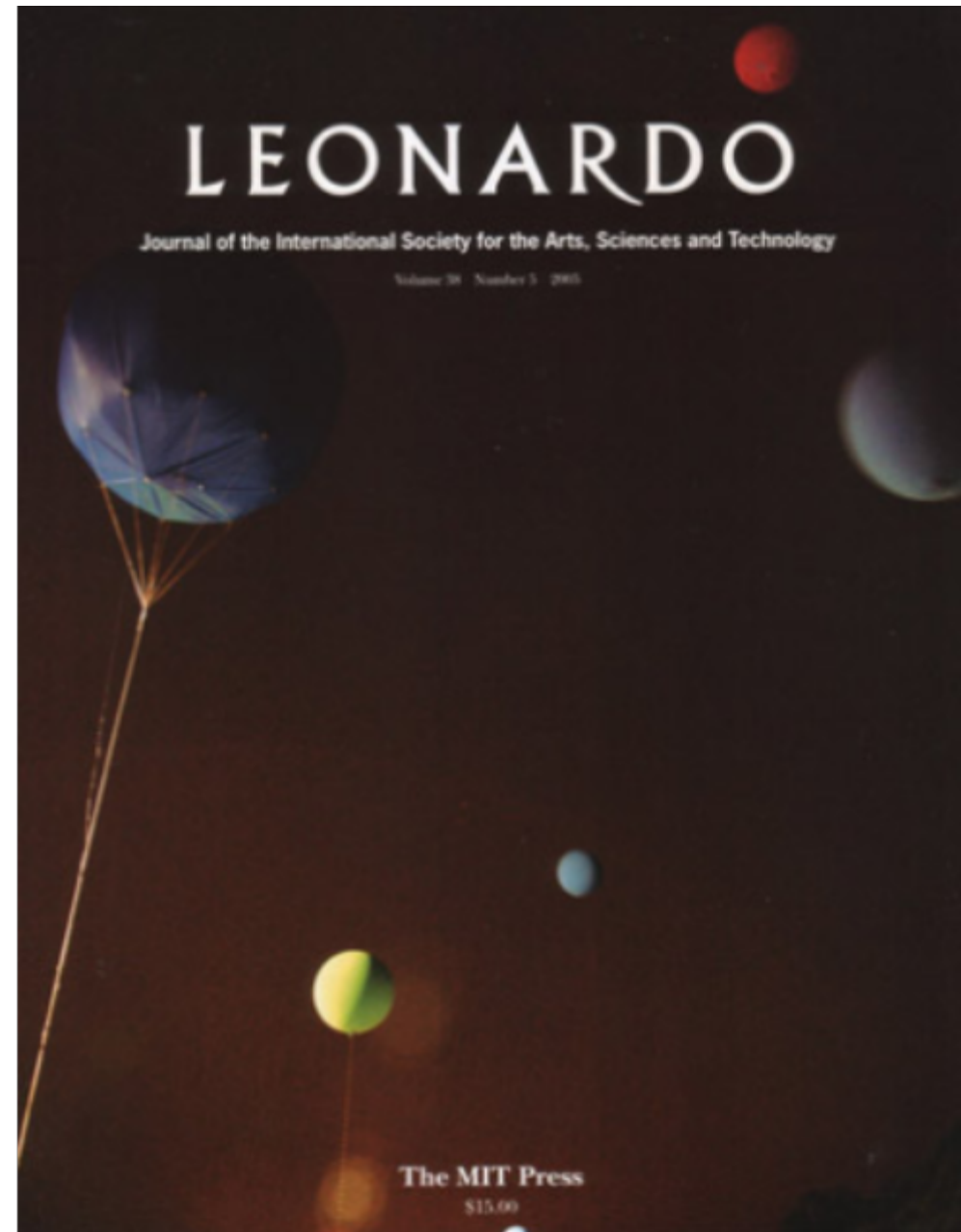
Founding of **LEONARDO**

- **Founded 1967**
- **Art-Science and Art-Technology**

- **c.f. Kepes: C.A.V.S**

- **Organisation for artists, scientists, engineers**
- **Premier Publications**
- **MIT Press with Leonardo Book Series and Journals**

- **Published 5000 artists, scientists, scholars**

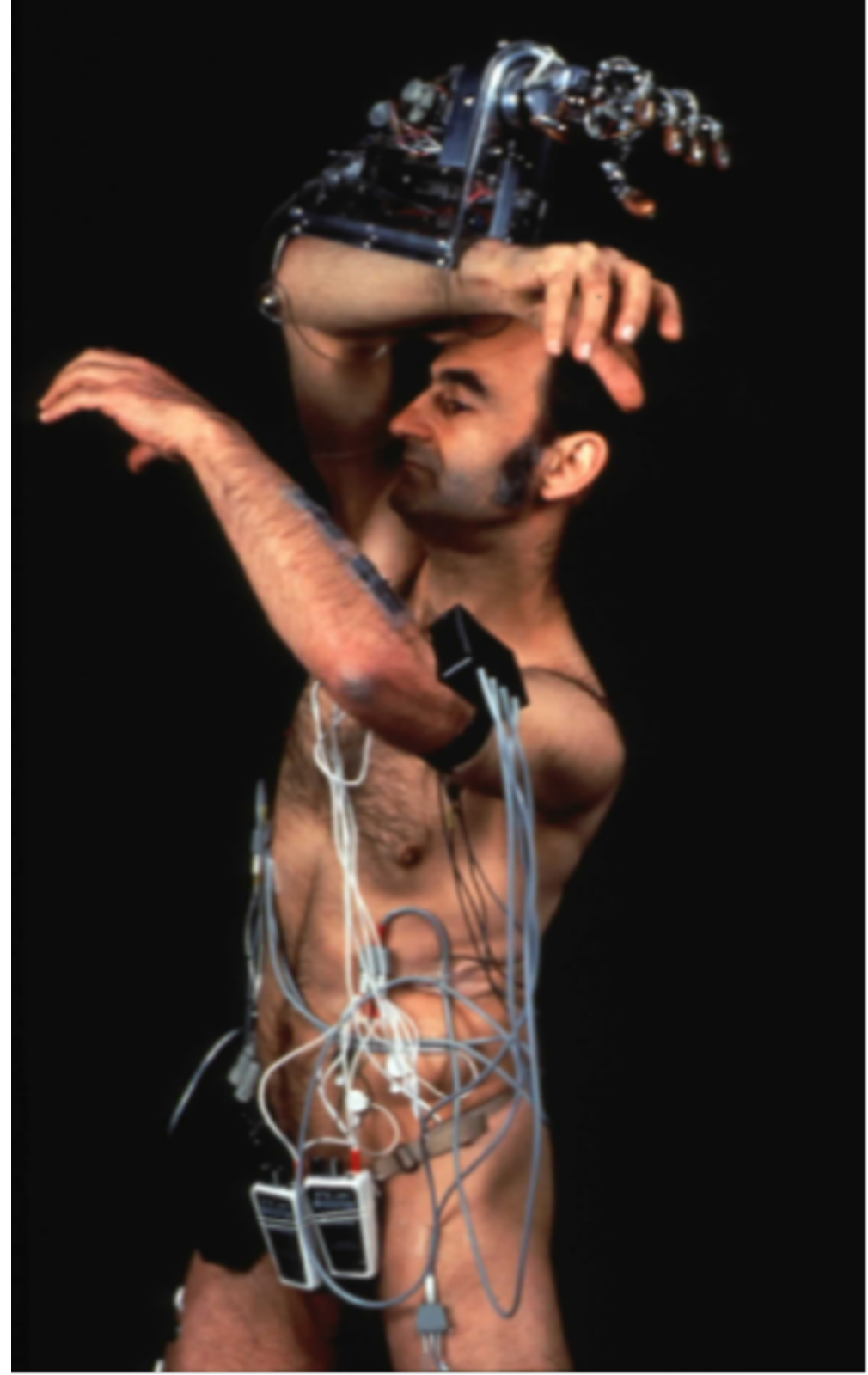


FJM GK



Intimate Science

- Einstein:”
 - *“The universe of ideas is just as independent of the nature of our experience as clothes are of the form of the human body”*
- *Stelarc and his “third arm”*
- *Mediated Sensuality*
- *Cultural Appropriation of Science*



- *New sensuality* :

- « All knowledge is conditioned by the structure of the knower » *Maturana, Varela*

- Perception and Consciousness

- « Reality has to do with causation and our notions of reality arise from our abilities to change the world » *Ian*

Art, Design, Science,
Technology



Modern Science Doesnt Make Common Sense

- Most knowledge about our world now comes through scientific instruments
 - Few people have experience of mediated senses
 - Much science is now done by experiments on data rather than experiments on the world
 - ***Cf Kepes and his New Landscape in Art and Science***
- Most of the world isnt on human scales
 - Nano science
 - Femto physics
- ***Our intuition, languages, metaphors, arts are built training on the wrong data for survival***

The Evolving Scientific Method

- **The Mysterious Effectiveness of Mathematics**
 - **New mathematics: complexity theory, network theory**
 - **Computable worlds. Algorithms, Information Aesthetics**
 - **Causality as an emergent property**
 - **Von Karman**
- **The Mysterious Effectiveness of Instruments**
 - **Our Senses are Filters not Windows on the World**
 - **Kepes and his New Landscape of Art and Science**
 - **Other scales of size, time, other sources of energy**
 - **New Ontologies**
 - **Some aspects of the world cannot be understood until we have invented the right instrument**

The Scientific Method as a Territory for Artistic Experimentation

- **Forming intuition on mediated sensory data**
- Designing/Interacting with simulated systems
- **Making sense of dense data, petabyte era**

- Making Science Intimate
- **Peoples Science**
- Micro Science

- ***New Ontologies, New Intuitions, New Sensuality***

● **Micro Science:**

● **Coupling Common Sense to Common Science**

● **Micro-Science**

- **Micro Science is to the National Science Foundation**
- **What Micro Credit is to the World Bank**

● **Micro-Science**

- **Owning data about your own environment**
- **Science creating communities own their knowledge**
- **Building intuition, language from mediated sensory experience**
- **NOT Amateur Science**

● **Science- Art Projects and Art-Science Projects**

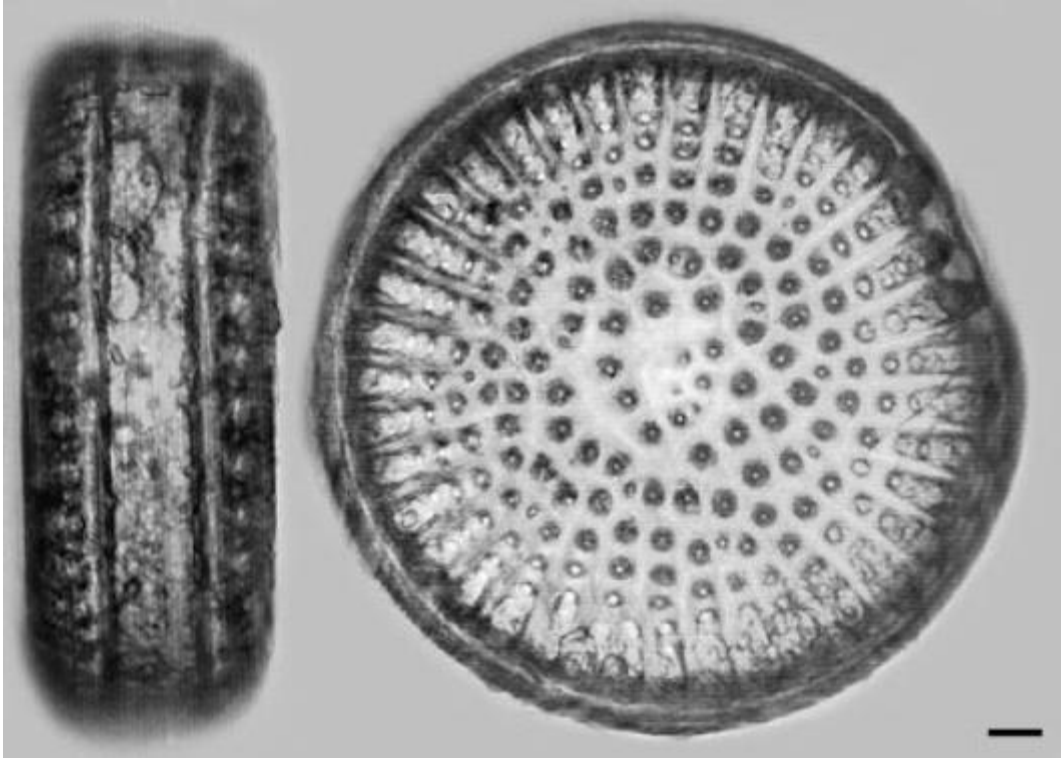
- **Art driven use of scientific methods and instruments**
- **Science driven development of cultural artifacts**

Hidden Ecologies *Art=Science Project* *« Sense of Place »*



- Artists Benton, McDougal, Microbiologists Wayner Lanier
- Kite and Balloon borne web cams and cameras
- Exploratorium Invisible Dynamics Project

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GRASSROOTS MAPPING

- <http://grassrootsmapping.org>

- MIT MEDIA LAB
- Design Ecology Group
- Center for Future Civic Media

- *Jeff Warren*

- Example of COMMUNITY
REMOTE SENSING



Community Remote Sensing

- **Remote sensing** : collection of information 'from a distance'.
- ***Community remote sensing is a new field that combines remote sensing with citizen science, social networks, and crowd-sourcing to enhance the data obtained from traditional sources.***
- ***Artists working with scientists re appropriate the world using « mediated » senses***

Open Observatories Manifesto



- *a) The right to the data taken about you and your world*
- *b) Duty to contribute open data for the cultural mutation needed for sustainable development*

We can only invent what we can imagine

W Kandinsky

What one person can imagine

another can make real

J Verne

How to learn to imagine ?

Artists and Scientists and the burning issues of their time



Thank
You

