



**Motivation**

**&**

**Strategy for this Workshop**

**Tony Readhead**

July 21- July 25, 2008

MMIC Array Receivers and Spectrographs Workshop  
Pasadena, California

# Critical Decision Point Reached

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Here at Caltech/JPL  
we have reached a critical decision point:

*either*

**Continue efforts on MMIC Arrays  
with appropriate levels of funding**

*or*

**Discontinue these efforts  
and turn attentions to areas  
where it is possible to get appropriate levels of funding**

*Our hope is that we will find that the world-wide interest in the exploitation of this technology for cosmology and astrophysics is sufficient to fuel complementary efforts on MMIC arrays at a number of partner institutions and to develop a coherent, coordinated plan for doing this, which will enable us to exploit the enormous potential of these devices over the next 3-10 years*

Our key objective is a  
*Report* presenting a *Roadmap*  
which lays out a:  
**detailed plan for the next 3 years**  
and a  
**less detailed provisional plan for the next decade.**

## Report Organization

Report Leader and Chief Editor is Tim Pearson

Discussion Leaders will be responsible for coordinating writing in their groups

### **Discussion and writing assignments**

#### **13:30-15:30**

- Astrophysics I (K. Spalding 410 - *Astrophysics*) Goldsmith
- Astrophysics II (Spalding Lab 113 - *CMB*) Church
- Planetary Science (Robinson 023) Allen
- Earth Science (Robinson 012) Lambrigtsen

### **Reports on Discussions (Goldsmith, Church, Allen, Lambrigtsen) Chaired by Werner**

#### **16:00-18:00**

- Devices (K. Spalding 410) Lai
- Modules (Robinson 023) Gaier
- Instruments (Robinson 012) Seiffert

### **Reports on Discussions (Lai, Gaier, Seiffert) Chaired by Seiffert**

### **Wednesday**

- 11:00-12:30 Discussion of Digital Backends and writing assignments - led by Ruf
- 14:00-15:30 Digital Backend Discussion (K. Spalding 410) Ruf
- 16:00-17:30 Writing
- 17:30-18:00 Reports on progress and problems (Goldsmith, Church, Allen, Lambrigtsen, Gaier, Seiffert, Ruf) Chaired by Lawrence

### **Thursday**

Review of funding opportunities

Review of overall strategy - Chaired by Lawrence and Readhead

## **Friday**

09:00-11:30 Writing

11:30-12:30 Discussion of Progress and Problems

14:00-15:30 Writing

Discussion of draft and future plans - chaired by Gaier

1. Identify breakthrough science enabled by large coherent arrays and hence also identify the critical parameters of MMIC arrays
2. Review current state of the art and assess potential for dramatic advances over the next 3 years and over the next ten years
3. Identify specific steps required and prototypes needed to realize potential of MMIC arrays (including estimate of scale and cost), with the objective of devising a Roadmap for key technological developments