

## WEB TEAM OVERVIEW

JET PROPULSION LABORATORY

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### Background

- Major factor in DOE'S PV Plan is low cost Si sheet
- Leading contender is dendritic web
- Requirement for DOE goals is sustained growth of 20 to 30 cm<sup>2</sup>/m
- Major problems are thermal stresses and instability at the growth interface
- Progress in solving these problems has been slow
- FSA Project suggested in-house development effort to help solve technical problems
- DOE approved suggestion
- Accordingly, Web Team was formed within the FSA Project

### Objective

- To conduct an in-house development activity which will increase the likelihood that web technology will help achieve the DOE goals

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## Approach

- **Team effort consists of combination of analytical and experimental work**
- **Operate a Westinghouse web growth system**
- **Measure high temperature properties of silicon**
- **Use stress model to determine a temperature profile which will yield satisfactory web**
- **Use thermal model of web to determine a thermal configuration which will yield the desired temperature profile**
- **Use thermal analysis of growth interface and the susceptor—crucible—melt to determine a thermal configuration which will improve stability of growth process**
- **Design, fabricate and test the thermal configurations and feed results back into the models**