



# NASA Electronic Parts and Packaging Program

- Goal is to *Provide Knowledge* to Program and Project Engineers, Technologists, & Safety and Mission Assurance organizations
- Agencywide Knowledge Base of EEE Parts and Packaging Reliability Characterization Data
  - *Test and Modeling* Results
  - *Radiation Test* Data
  - *Performance Characteristics* in NASA Mission Environments
  - Technology Insertion Risks
  - Newly Available COTS, and Advanced Parts and Technologies
- Cross-Enterprise Activity
  - Focus on Enterprise Future Needs



# NASA Electronic Parts and Packaging Program

- EEE Parts and Packaging is Integral to all NASA Products
  - Science Instrumentation
  - Spacecraft and Aircraft Systems
  - Cutting-Edge Technology Developments
  - Ground Systems
- Commercial-Off-The-Shelf (COTS) Parts
  - Interest in Greater use for Faster, Better, Cheaper Missions
  - Can Simplify Designs and Reduce Cost and Schedule
- Requires Attention to Ensure Reliability is not Compromised
  - Incorrect Application
  - Use in Environment for which Not Qualified. Example: Hubble Space Telescope Optocoupler
- Ensuring Adequate Testing is Key to Enhancing Reliability and Performance in NASA Mission Environments.
  - Example: AXAF Chandra Printed Wiring Boards



# NASA Electronic Parts and Packaging Program Testing and System Health

***Goal: Enhanced Safety through Adequate  
Testing for NASA Missions***

- **Requires**
  - A “Do It Right the First Time” Mentality
  - Clearly Defined Electronic System/Subsystem Requirements
  - Sound, Smart Planning and Design
  - Well-Thought-Out Verification and Test Activities Based on Knowledge
  - Rapid Development of Reliable Products
- **Results in Decreased Failures**
  - Late in Development - e.g. During Integration and Test
  - During Mission Ops
- **Ensures Mission Success**



# NASA Electronic Parts and Packaging Program Sound Engineering Practice

- It is the *Responsible Use* of NEPP Data That:
  - Increases Health of Our Systems
  - Builds Systems of High Reliability
  - Assists in Definition of Tests Required for Specific Mission Needs

***Challenge -- Let's Take Advantage of  
the Expert Knowledge Available  
to Make Sound Engineering Decisions  
to Ensure Mission Success!***