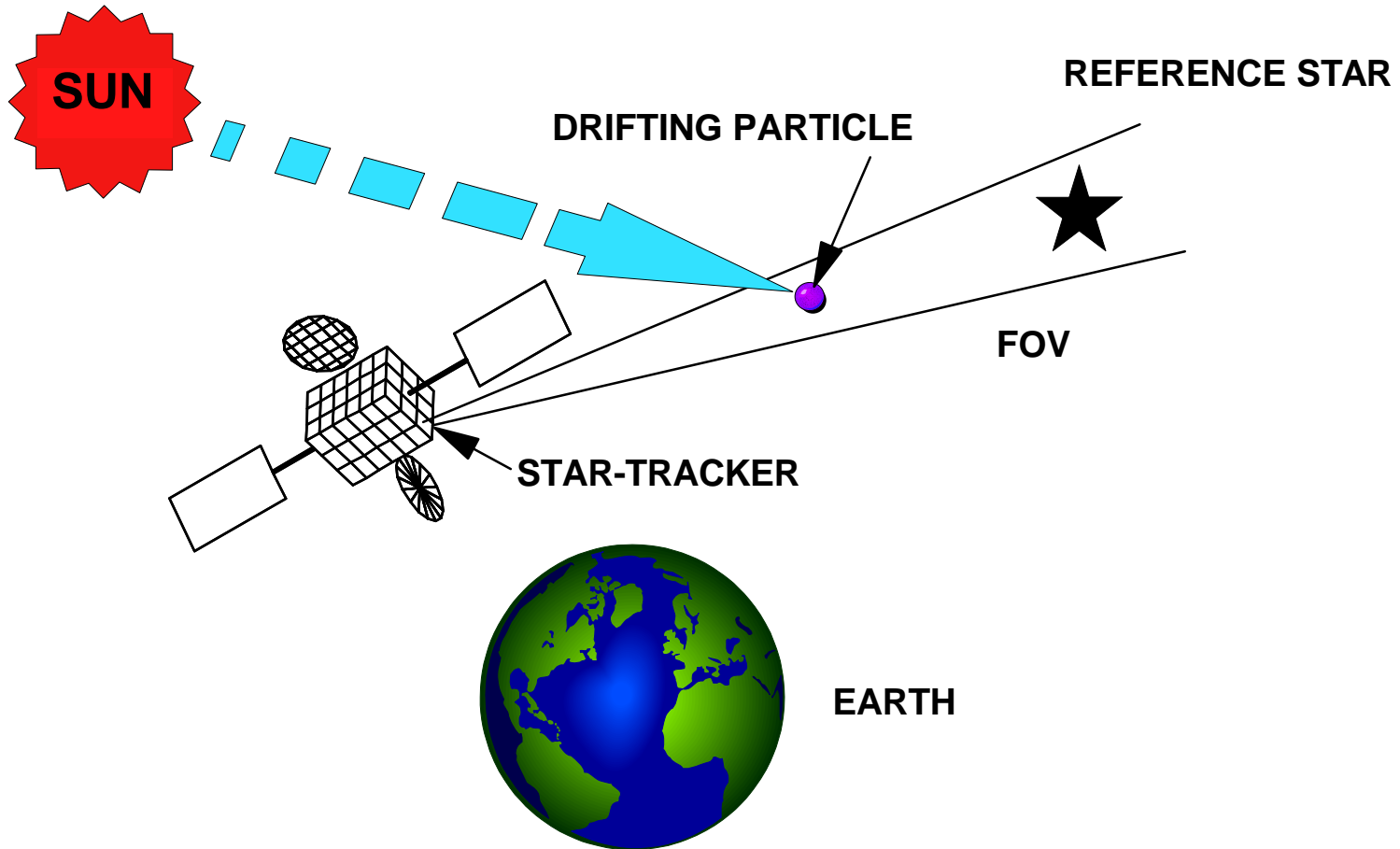


OPTICAL INTERFERENCE

DUE TO CONTAMINANTS



**ERRATIC STAR-PATTERN
(LIGHT SCATTERING BY PARTICLE INTO STAR-TRACKER)**

RESULT: LOSS OF SPACECRAFT ATTITUDE CONTROL

ANALYTIX CORPORATION

1818 Blakefield Circle, Timonium, Maryland 21093 USA, Tel (410) 321-5710, Fax (410) 494-1575

Rocket Plume & Contamination Analysis

Contamination Production and Combustion

Contaminant Transport and Chemical Kinetics

Contaminant Deposition and Surface Effects

Plume Impingement and Back-Flow Analysis

TPP

Transient Performance Program

- Bi-propellant Engine Analysis
- Droplet Dynamics
- Chamber Pressure Dynamics & Temperature
- Cold-Start Transients
- Hot-Start Transients
- Injector Design & Analysis
- Combustion Phenomena
- Provide Input For MULTRAN
- (Plume Flow-Field)
- Diagnostic Graphics

MULTRAN

- Multi-Phase Rocket Plume
- Flow-Field Inside Nozzle and Exhaust Plume
- Transport Properties Data
- Gas-Phase Streamlines for Nozzle & Plume
- Plume Properties along Streamlines
- Pressure, Temperature, and Density
- Diagnostic Graphics

SURFACE

Contamination Effects

- Contaminant Flux Impingement
- Line-of-Sight Densities
- Deposition
- Abrasion
- Deposition Effects
- Contamination Due To:
 - Outgassing
 - Venting
 - Evaporation

DSMS

Direct Simulation Monte Carlo

- Plume Back-Flow Analysis up to 180 Degrees Off-Axis
- Convective Heating Rates
- Contamination
- Pressures
- Diagnostic Graphics

N2H4

- Mono-propellant Engine Analysis
- Combustion Phenomena
- Droplet Dynamics
- Chamber Pressure Dynamics & Temperature
- Cold-Start Transients
- Hot-Start Transients
- Contaminant Production
- Provide Input For MULTRAN (Plume Flow Field)
- Diagnostic Graphics

PLIMP

PLume IMPingement

- Forces
- Moments
- Pressures
- Convective Heating Rates
- Diagnostic Graphics