TELESCOPE CONTROL SYSTEM 1 (TCS1) SIMULINK MODEL

Signal Scopes

West Ref Gain
West Limit Ref Select
-0.720
W. Slew Vel Limit
-0.160
W. Beam Vel Limit

Velocity, Magnitude Limited (op amp rails)

Velocity CMD In Velocity In Conditioned Tach Out Current CMD Out

Velocity Control Loop

POSITIVE TORQUE (EAST)

NEGATIVE TORQUE (WEST)

User Input

Offset In Tracking Speed In SLEW IN Event Trigger Time SLEW(0)_Offset(1) Select Position Error In

Motion CMD Offset SLEW Direction 0=E 1=W Slew Switch Control

TCS1 Control Signals Offset/SLEW Select

Offset/SLEW Simulation Start Time (sec)

Offset Select

Feed Forward Out Offset Feed Forward

SLEW or Beam Accel Limit Select

SLEW Select

SLEW Direction In SLEW Mode Active In SLEW FD FWD Out SLEW Feed Forward

SLEW Accel Limit

Current CMD In Motor Velocity In Torque Out Actual Current Out

NC307 Amplifier and Motor Positive (EAST)

Current CMD In Motor Velocity In Torque Out Actual Current Out

NC307 Amplifier and Motor Negative (WEST)

More Proportional Gain

1.2 Sum Gain SLEW

340E-6s+1 Proportional Gain & LP Filter

1 Low Pass Filter

5035.762 Encoder to DA Gain (rad/s to volts)

Encoder (quantization only)

1.96 1.2 Proportional Limit (op amp rails)

100E-6s+1 Proportional Gain LP Filter

90E-3s+1 3.5E-6s +8E-3s+1 Lead Compensator & LP Filter

Torque - a Torque - b disturbance

position velocity - a velocity - b

2 motor mechanical system (TELESCOPE)