astroguide Actual Aligned2WestPier Target astrometry telescopeIsAligned: bool AngularSeparation() Config() EstimateSlewingTime(londps, latdps) EstimateSlewingToTargetAngles(londps, latdps, dtsec) EstimateTargetAngularSpeed(dtsec) GetSecPastJ2000TDBNow(str, offset) GetUTCTimeStrFromEt(et) SetActual(et, lon, lat) SetTarget(et, ra, de, SPKObjectStr)

Shutdown()

STWMotorsLowLevel DEGS PER STEP 0: float DEGS PER STEP 1: float STEPS PER DEG 0: float STEPS PER DEG 1: float STEPS PER REV 0: float STEPS PER REV 1: float

STWKeyBoard OnPressedQuene: Queue OnReleasedQuene: Queue keys: list listener Config()

Filter(key) doJob(CurrentEt) Shutdown() startJob(CurrentÉt) listenPressed() listenReleaseded() on press(key) on release(key)

STWJob

started: bool

deltaEt

startEt

stopJob()

AnglePerSteps(motorId, steps) Axis0 Angle() Axis0 GetMaxSpeed() Axis0 HardStop() Axis0_Run(angle_per_s) Axis0_RunActualSpeed(angle_per_s)
Axis0_SetAngle(angle) Axis0_SetAngle2Zero() Axis0 SlewIncTo(deginc) Axis0 SlewTo(angle) Axis0 SoftStop() Axis 1 Angle() Axis1 GetMaxSpeed() Axis 1_HardStop() Axis 1 Run(angle per s) Axis 1 SetAngle(angle) Axis1 SetAngle2Zero() Axis1 SlewIncTo(deginc) Axis1 SlewTo(angle) Axis1 SoftStop() StepsPerAngle(motorId, angle)

isConfigured: bool kernelLoaded: bool

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kernelLoaded: bool Config(fname) GetAzimutalCoordsString(lon, lat) GetJ2000CoordsString(ra. de) GetSecPastJ2000TDBNow(str, offset) GetTelescopeCoordsString(lon, lat) GetUTCNowTimeStringNow() Init() LonLatTelescope2RaDeJ2000(et, Lon deg, Lat deg, Aligned2WestPier) RaDeJ20002LonLatAzmimutal(et, ra deg, de deg) RaDeJ20002LonLatTelescope(et, ra_deg, de_deg, Aligned2WestPier) SPK2RaDeJ2000(et, idstr) Shutdown() ddeg2dms(a, chdeg)

ConfigRegs: dict L6470 MAX POSITION: int L6470 MAX SPEED : int L6470 MIN POSITION: int L6470 POSITION RANGE: int L6470 SPEEDREG 2 STEPSHZ: float Status Bits Ptr: list StatusBitsStr: list StatusErrorBitsPtr: list StatusErrorBitsStr: list StatusRegs: dict isInitialized: bool serialPort : Serial

board

AbsPos2Pos(abspos) GetErrorStatus(motorId) GetParam(motorId, paramStr) GetPosCmd(motorId) GetRegs(motorId, dict) GetStatus(motorId) GetStatusBitsMsg(motorId) GetStatusErrorBitsMsg(motorId) Goto(motorId, abs pos) GotoDir(motorId, dir, abs pos) GotoPosCmd(motorId, position) GotoPosCmdDir(motorId, position) HardHiZ(motorId) HardStop(motorId) Init(loadConfigFromFile, M0RegisterConfig, M1RegisterConfig, comPort) IsBusy(motorId) LoadConfigRegistersFromFile(motorId, fname) Move(motorId, dir, steps) MoveCmd(motorId, Steps) Pos2AbsPos(position) PrintConfigRegs(motorId) ResetDevice(motorId) ResetPos(motorId) Run(motorId, dir, speed) RunCmd(motorId, StepsHz) SaveConfigRegistersToFile(motorId, fname) SetParam(motorId, paramStr, value) SetPosCmd(motorId, position) SetRegEx0(motorid, value) SetRegs(motorId, data) Shutdown() SoftHiZ(motorId) SoftStop(motorId) SpeedReg2StepsHz(reg) StepClockMode(motorId, dir) StepClockModeOff(motorId) StepClockModeOn(motorId, stepsHz) StepsHz2SpeedReg(StepsHz) WaitIsBusy(motorId) WaitSoftStop(motorId) isBUSY(status) isDIR(status) isHiZ(status) isMotorAcceleration(status) isMotorConstantSpeed(status) isMotorDeceleration(status) isMotorStopped(status) isNotPerformedCmd(status) isOCD(status) isStepLossA(status) isStepLossB(status) isThermalShutDown(status) isThermalWarning(status) isUVLO(status)

isWrongCmd(status)

components ControlCDetected: bool IsMountTracking: bool SlewSpeedFactor: float TimeOffsetSec: int astroguide lonps mount stellarium Config() DoDataLog(CurrentEt) DoStellariumInput(CurrentEt) DoStellariumOutput() DoUserControlJob(CurrentEt) ExitLoop() Init() Loop() PreLoop() Shutdown() handlerSIGINT(signal received, frame)

mount comportDevStr log CheckErrors() SetConstantSpeed(lonps, latps) Shutdown() SlewConstantSpeed(motor, speedfactor, maxspeed, dir) SoftStopMotors()

SendQuene: Queue isConfigured: bool listenQuene : Queue listening socket : socket listening thread: Thread listening thread event: Event open sockets: list open_sockets_lock : lock send thread event: Event send thread thread: Thread Config() Init() ReceiveFromStellarium() SendToStellarium(ra_deg, de_deg)

listen()

send()

stellarium

Shutdown()

stwObject isConfigured: bool isInitialized: bool isInitialized: bool sys log: NoneType GetNtpOffsetSec() Config() InitializeFrom(config) LoadConfig(fname) SaveConfig (fname, config)

Shutdown()

JOY STICK AXIS X S IDLE : int JOY STICK AXIS Y CENTER : int JOY STICK AXIS Y DOWN: int JOY STICK AXIS Y S IDLE : int JOY STICK AXIS Y UP : int JOY STICK X : int JOY STICK X S : int JOY STICK Y: int JOY STICK Y S : int KEY A PRESSED : int KEY B PRESSED : int KEY C PRESSED : int KEY D PRESSED : int KEY RELEASED : int KEY S1 PRESSED : int KEY S2 PRESSED : int PollDataQuene : Queue XCOORD : int XCOORD CHANGED: bool YCOORD: int YCOORD_CHANGED : bool button A: int button B: int button C: int button D: int button S1: int button S2: int exitthread : Event getEventThread: Thread h: bool, Device isConfigured: bool path: bytes pid: int supressretry: bool

JOY STICK AXIS X CENTER: int JOY STICK AXIS X LEFT : int

JOY STICK AXIS X RIGHT : int

Config() Init() Shutdown() decode(data) getEvent() listen()

vid : int