Offer for 1m Cassegrain azimutal mounted

Position	Short Description
1. 1 m Telescope	
Optics	- LOMO Optic Set - Ritchey Chretien - Material Sitall (like Zerodur) - 100 mm free diameter - 1025 mm mechanical diameter - Primary focal ratio f/3 - effective System focal ratio f/8 (f=8000) - Tertiary mirror for Nasmyth focus - Better than L/32 RMS Wavefront error and L/8 PtV wavefront error measured in autocollimation - Strehl ratio better than 92% in focus - Interferometric report of all mirrors and system - Field corrector MC Coated for 100mm field diameter - Focal plane scale 38 micron per arc sec - Diffraction limited field of view 42 arc min. - Image quality 80% in <0.2 arc sec - Al+SiO2 coating on all mirrors - All refractive elements coated with an Multilayer-AR coating of R<0.5% for 400-700nm and R<1% for 400nm to 1100nm per surface
Tube	- Truss Tube - Lasalle main mirror support - 2 Nasmyth focal stages with turnable tertiary mirror - 2 focal stages (left, right) with Field Derotator servo controlled, 20kg Load - Computer controlled focusing (<1micron readout acc.) - Main mirror cover computer controlled - Light shielding to avoid direct stray light in CCD sensor
Mount	- AltAz mount (Design 1) - Dual Loop Servo drive on big stainless steel friction drive - external Heidenhain-Encoders with <0.08" resolution - 3 degree per second maximum slew rate in Azimut - 3 degree per second maximum slew rate in Altitude - Eigen frequency above 10 Hz

Telescope control system and software	- Industrial PC, > 2,4 GHz with all necessarily PC cards, mouse and keyboard, Monitor for the TCS Autoslew - 32bit Win controll software Autoslew - Windows XP or Vista - Full vb-scripting via ActiveX possible for telescope, rotator, focus and filter slider - Pointing (after calibration with pointing model): - 8" RMS for >20 and <75 degree zenith distance - 12" RMS pointing for 75<Z<85 - 85<Z<89.5 is possible but not advised for serious work - Open Loop Tracking >20 and <75degree Alt : - <0.2" RMS in 10 seconds in 95% of all test intervals - <0.6" RMS in 10min in 95% of all test intervals - Open Loop Tracking >75 and <85 degree Alt: - <0.4" RMS in 10 seconds in 95% of all test intervals - <1" RMS in 10min in 95% of all test intervals - Closed loop tracking 0.35" RMS in 60 mins. - Software limits for rotation - Hardware limit switch for altitude (horizon limit, zenith limit) - Dome control Ascom compatible - Temperature compensation of the focus drift - large object database (NGC, IC; UGC, PK) - RA, DE input - ACL (Astronomical Command Language) for external remote control of the telescope, with RS232 or LAN - LCD-Hand-Box with integrated Micro-Controller - Automatic initialisation of the telescope - Fully automatic pointing file creation possible with any MaximDL compatible CCD-Camera - Remote control possible via ACL-protocol and RS232 - Compatible with all major Ascom software
Arrangements for Truck installation	- Telescopes Parking position horizontal with max height of 280cm (can be made even smaller if necessary) - Telescope main mirror on rubber buffers during transport - Manual star centering of 4 stars in each direction (will already give reasonable pointing) to allow further automatic pointing file (to reach final specs). - Automatic pointing file (possible for most common CCD cameras) (after rough manual calibration)
4. Installation	- Packaging - Without shipment costs - Installation of telescope - 2 weeks at observatory for testing and fine tuning the system to achieve the final specifications - costs without crane costs

Upgrade Options:

Derotator	- Renishaw Encoders with 0.01" Readout - Derotator Calibration switch with 20" Accuracy
Professional AltAz with Torque Drive	- Design 2 with stiffer design and higher overall accuracy - Direct Drive Torque motors with 400NM Torque - 10 degree per second maximum slew rate in Azimut - 10 degree per second maximum slew rate in Altitude

	- Renishaw Encoders with 0.01" Encoder Readout on both axes - <u>Enhanced pointing and tracking specifications:</u> - Pointing: - 3" RMS for >20 and <75 degree zenith distance (after calibration with pointing model) - 6" RMS pointing for 75<Z<85 - 85<Z<89.5 is possible but not advised for serious work - Open Loop Tracking >20 and <75degree Alt: - <0.15" RMS in 10 seconds in 95% of all test intervals - <0.3" RMS in 10min in 95% of all test intervals - Open Loop Tracking >75 and <85 degree Alt: - <0.25" RMS in 10 seconds in 95% of all test intervals - <0.5" RMS in 10min in 95% of all test intervals - Closed loop tracking 0.2" RMS in 60 mins.
Automatic Alignment and Calibration	- Main mirror x-y-z axis position measurement with linear encoders and automatic re-adjustment after transport - GPS compass for rough referencing - Inclinometer for slope/tilt measurement of telescope base (<1°) - GPS sensor for time and position measurement - Wide field finder telescope with CCD-Cam for initial pointing file - No manual input needed

Design 1 with conventional servo drive and dual loop encoder control), Example Stockholm Alba Nova University 1m:

Design 2 with modern Torque Drive and very high pointing specifications