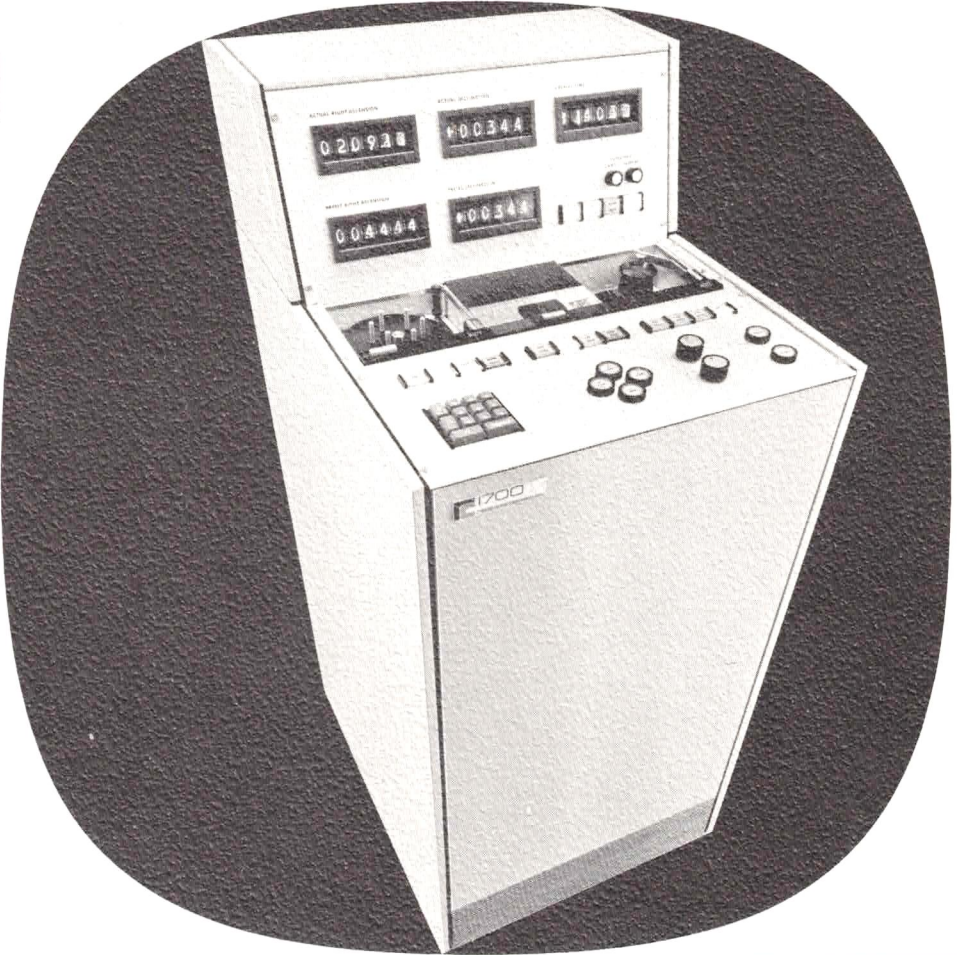
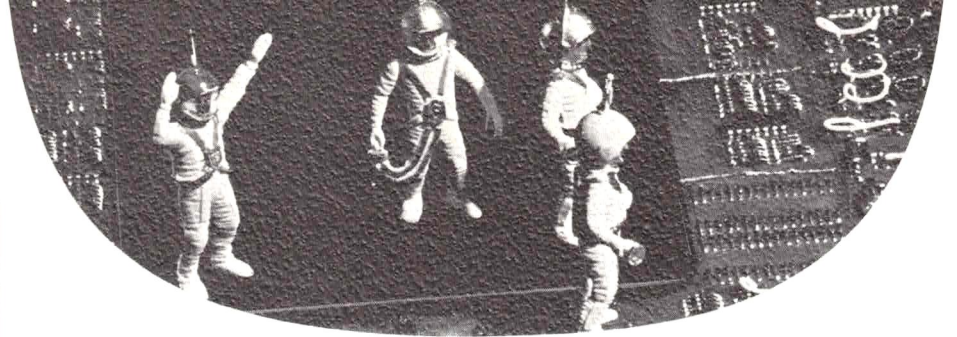


RC



RC 1700 TELESCOPE CONTROLLER

- Integrated hardware-software system, based on RC7000 minicomputer series, for numerical control of angular positions of telescopes.
- Automatic setting with coordinates input from paper tape or keyboard. Manual setting in fixed steps and at different speeds.
- Accuracy of setting and superposed daily movement better than $0''.2$. No significant position errors over a wide range of torque loads.



RC 1700 Telescope Controller

The RC 1700 permits observation coordinates to be input from punched paper tape or a numeric keyboard. This greatly reduces the time wasted on position changes, while advanced preparation of the observation sequence on paper tape makes it possible to utilize the telescope and favorable observation conditions more efficiently. Observations not prepared in advance can be inserted quickly and easily from the keyboard.

The coordinate system used is fixed in relation to the celestial sphere, so that the movement of the latter is automatically superposed the setting. As this is done electronically, the same motor can be used for position changes and the daily movement of the telescope, a reduction in mechanical complexity, which simplifies maintenance and increases reliability. The high precision of the setting and superposed daily movement is achieved by the selection of a suitable angular increment and careful design.

The RC 1700 processing unit performs programmed direct digital control of two high performance, printed circuit DC servo motors, which in turn control telescope position. Digital output is supplied via two digital to time ratio converters to two motor power amplifiers, which are based on the pulse ratio modulation principle to increase power capability and reduce heat dissipation.

The operator console includes a 70 characters/second tape reader, numeric keyboard, five decimal coordinate and time displays, and various function buttons and/or indicators. The standard input medium is 8-track paper tape with even parity. The input format is ISO: D60.E50 (ISO/TC97 DR 1318). Software includes a monitor program, six real-time task programs, and a table with the geographical position of the observatory.

The RC 1700 is interfaced for connection to automatic guiding equipment, and the RC 1700 data channel can be expanded for connection to data acquisition equipment or a higher level computer.

Electrical Interface

DC outputs for servo motors
RC 7000 data channel buslines
guiding pulse input
time pulse input
tachometer index and position pulses
miscellaneous telescope contacts

Resolutions

automatic setting, right ascension:	15"
automatic setting, declination:	6"
manual setting, right ascension:	0".15
manual setting, declination:	0".1875
offset, declination:	0".8

Accuracies

right ascension, typically:	$\pm 0".1$
declination, typically:	$\pm 0".1$

Speeds

automatic, right ascension:	1°/second
automatic, declination:	1°.25/second
manual high, right ascension:	1°/second
manual high, declination:	1°.25/second
manual medium, right ascension:	3'/second
manual medium, declination:	3'.75/second
manual low, right ascension:	0".3 /second to 19".2/second
manual low, declination:	0".375 /second to 24".0/second
approximate acceleration and brake time, high speed:	1 second
equivalent acceleration and brake angle:	0°.5



AS REGNECENTRALEN

SCANDINAVIAN INFORMATION PROCESSING SYSTEMS

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