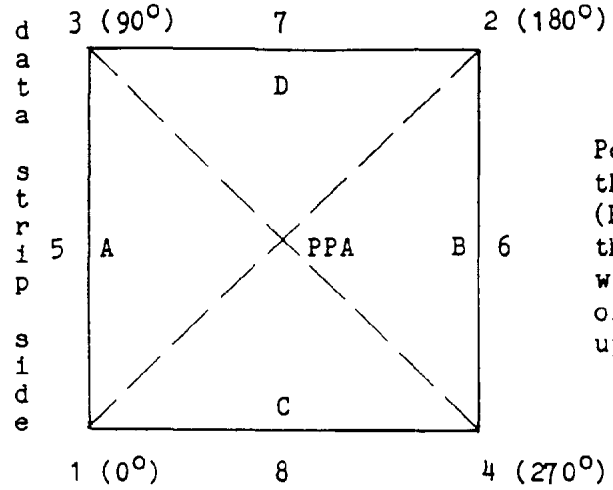
VII. Principal Points and Fiducial Coordinates



Positions of all points are referenced to the principal point of autocollimation (PPA) as origin. The diagram indicates the orientation of the reference points when the camera is viewed from the back, or a contact positive with the emulsion up. The data strip is to the left.

	X coordinate	Y coordinate
Indicated principal point, corner fiducials	-0.001 mm	-0.003 mm
Indicated principal point, midside fiducials	-0.002	-0.003
Principal point of autocollimation	0.0	0.0
Calibrated principal point (point of symmetry)	0.002	0.004

Fiducial Marks		
1	-106.001 mm	-106.004 mm
2	105.997	105.997
3	-106.005	105.998
4	106.002	-106.004
5	-110.005	-0.003
6	110.001	-0.003
7	-0.006	109.993
8	0.002	-110.003

VIII. Distances Between Fiducial Marks

Corner fiducials (diagonals)

1-2: 299.812 mm 3-4: 299.820 mm

Lines joining these markers intersect at an angle of 90° 00' 01"

Midside fiducials

5-6: 220.006 mm 7-8: 219.996 mm

Lines joining these markers intersect at an angle of 90° 00' 07"

Corner fiducials (perimeter)

1-3: 212.002 mm 2-3: 212.002 mm

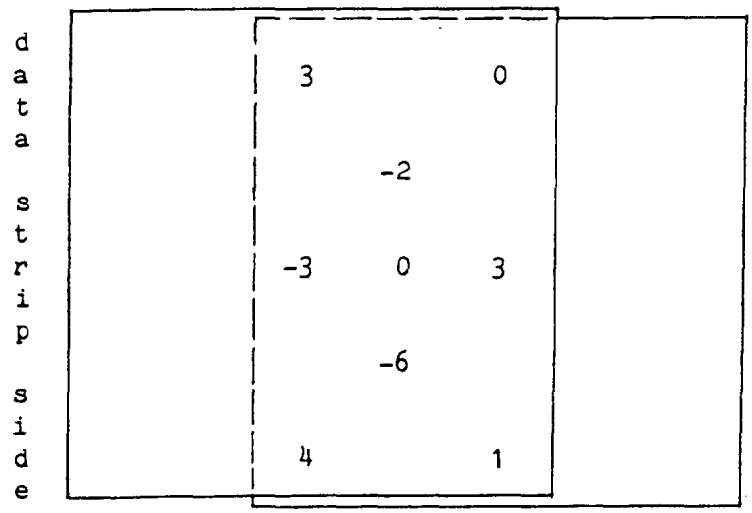
1-4: 212.003 mm 2-4: 212.001 mm

The method of measuring these distances is considered accurate within 0.005 mm.

IX. Stereomodel Flatness

Drive unit No.: 5160-566 Base/Height ratio: 0.6

Platen ID: 566 Maximum angle of field tested: 40°



Stereomodel
Test point array
(values in micrometers)

The values shown on the diagram are the average departures from flatness (at negative scale) for two computer-simulated stereomodels based on comparator measurements on contact glass (Kodak Micro-flat) diapositives made from Kodak 2405 film exposures. These measurements are considered accurate within 5 um.

X. Resolving Power in cycles/mm

Area-weighted average resolution: 49 Film: Type 2405

Field angle:	0°	7.5°	15°	22.7°	30°	35°	40°
Radial lines	48	48	57	48	57	57	57
Tangential lines	48	40	48	48	48	40	40

Bradish F. Johnson

Bradish F. Johnson
Chief, Optical Science Laboratory
National Mapping Division

FILM RADIAL DISTORTION, STEREOMODEL FLATNESS AND RESOLVING POWER

Drive unit No.: 5160-566
Platen ID: 566

Base/Height ratio: 0.6
Maximum angle of field tested: 40°

Calibrated Focal Length

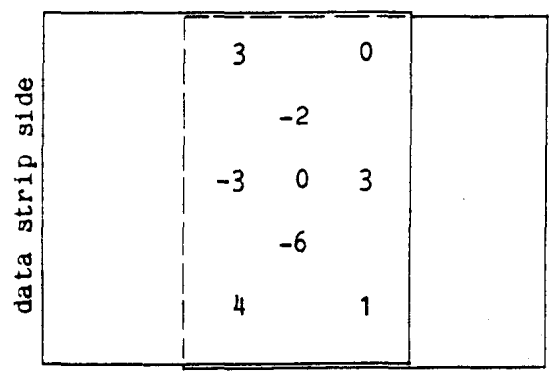
flash plate: 153.109 mm
film: 153.115 mm

IX. Radial Distortion

Field angle	$\bar{D}_c$	D_c for azimuth angle 0° A-C	90° A-D	180° B-D	270° B-C
degrees	um	um	um	um	um
7.5	1	0	1	2	2
15	2	2	2	3	3
22.7	1	-1	1	1	1
30	1	3	0	0	2
35	0	2	-1	1	-1
40	-2	-3	-2	-2	-3

X. Stereomodel Flatness

The values shown on the diagram are the average departures from flatness (at negative scale) for two computer-simulated stereomodels based on comparator measurements on contact glass (Kodak micro flat) diapositives made from Kodak 2405 film exposures. These measurements are considered accurate within 5 um.



Stereomodel test point array
(values in micrometers)

XI. Resolving Power in cycles/mm

Area-weighted average resolution: 49 Film: Type 2405

Field angle:	0°	7.5°	15°	22.7°	30°	35°	40°
Radial lines	48	48	57	48	57	57	57
Tangential lines	48	40	48	48	48	40	40

Bradish F. Johnson

Bradish F. Johnson
Chief, Optical Science Laboratory
National Mapping Division