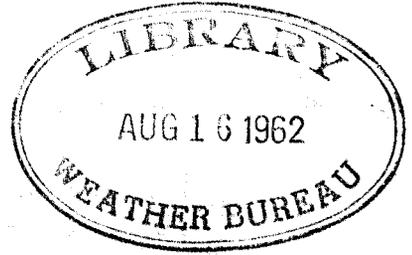


TL
798
.M4
H6
1961

U. S. Weather Bureau.

How weather satellite systems work.



HOW
WEATHER SATELLITE SYSTEMS
WORK

TL
798
.M4
H6
1961

~~120 325~~

U. S. DEPARTMENT OF COMMERCE
U.S. WEATHER BUREAU
" Washington, D.C.

National Oceanic and Atmospheric Administration TIROS Satellites and Satellite Meteorology

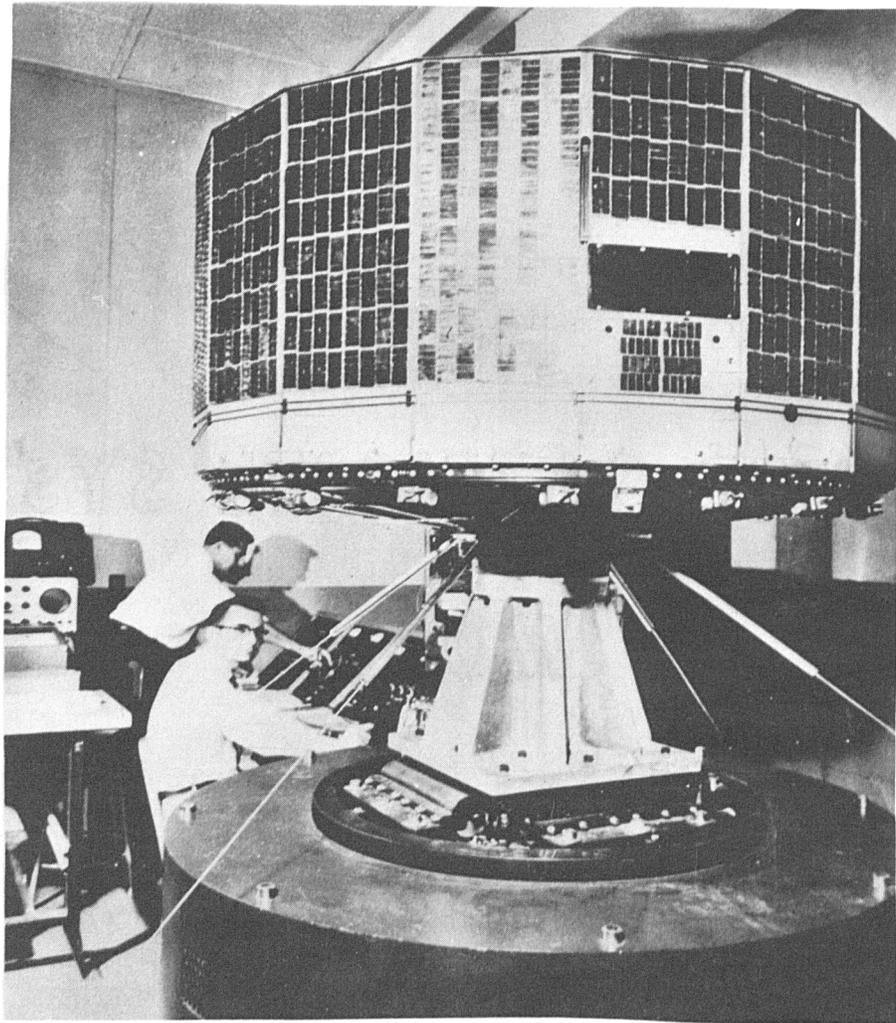
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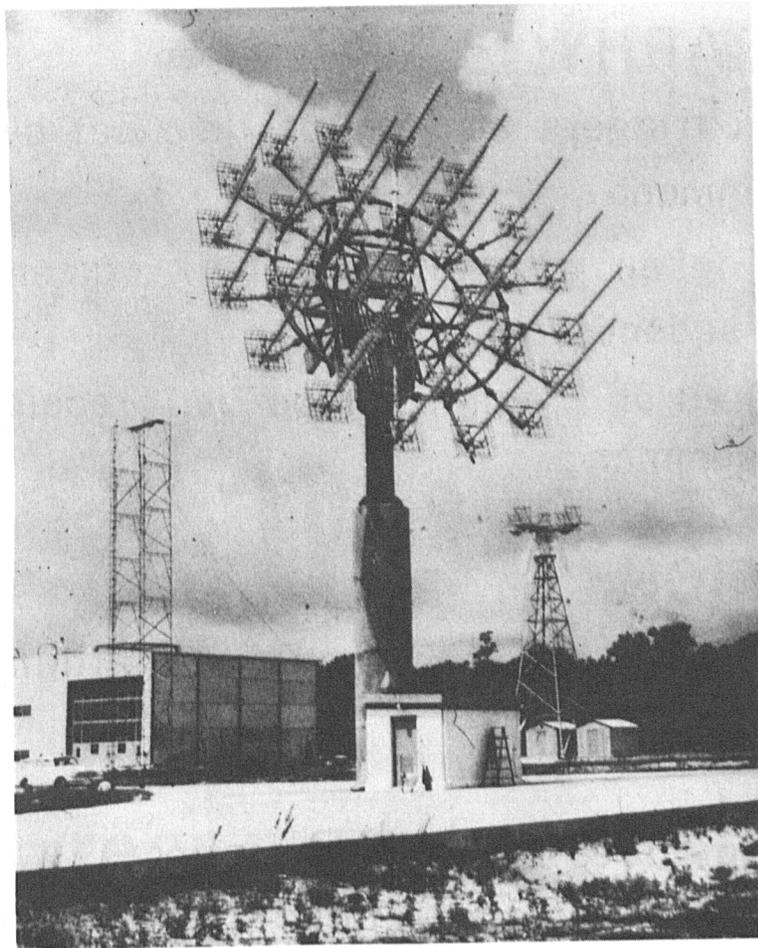
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HOV Services
Imaging Contractor
12200 Kiln Court
Beltsville, MD 20704-1387
January 26, 2009



TIROS SATELLITE
undergoing vibration test

COMMAND & TRACKING ANTENNAE



WALLOPS STATION, VIRGINIA

COMMAND:

- U. S. Weather Bureau decides area to be photographed
- NASA computes command signal
- Data acquisition station telemeters command to TIROS

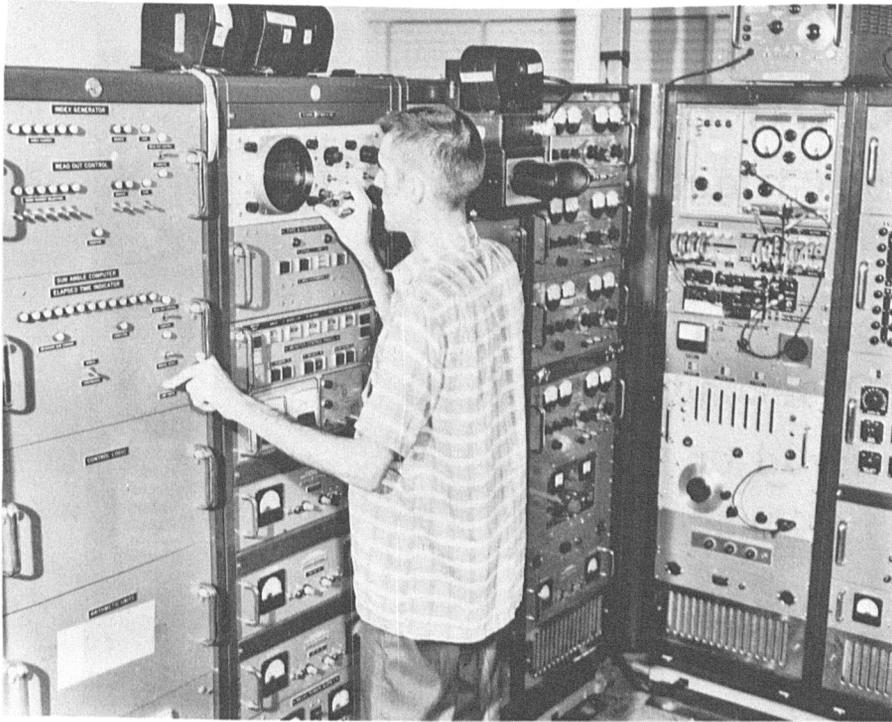
PHOTOGRAPHY:

- TIROS clock triggers camera at time set by ground command
- 32 pictures taken with either or both cameras, one picture every 30 seconds
- Pictures stored on magnetic tape until receipt of read-out command

ACQUISITION:

- Acquisition station commands satellite within telemetry range
- Commands:
 - Direct pictures in range of station
 - Read-out of remote pictures stored on tape
 - Sets clock for next picture sequence

DATA ACQUISITION STATION



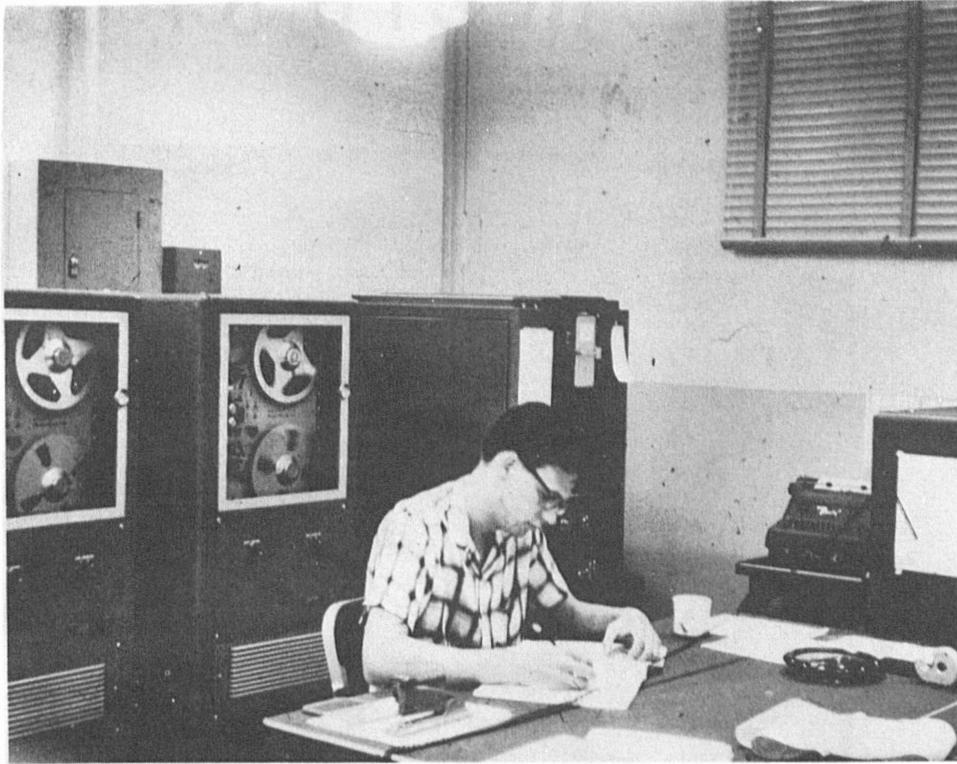
Pictures received on vidicon (TV) tube, photographed by camera under hood (upper center)

HURRICANE ESTHER

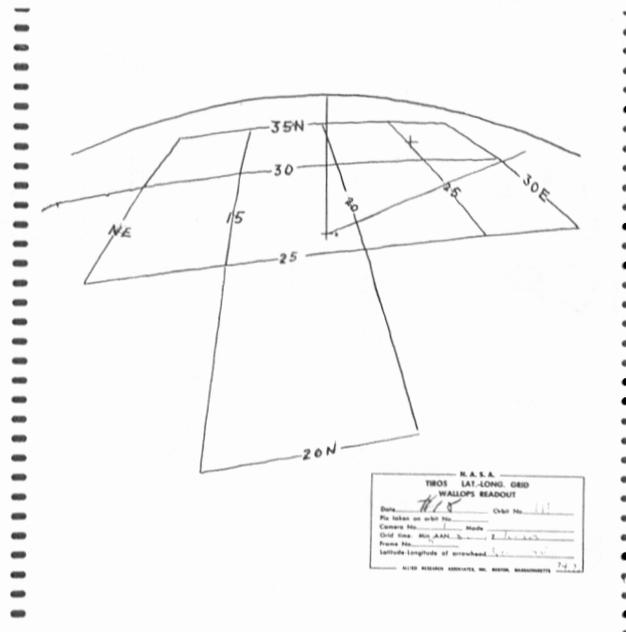


A single frame from a picture
sequence

G-15 COMPUTER

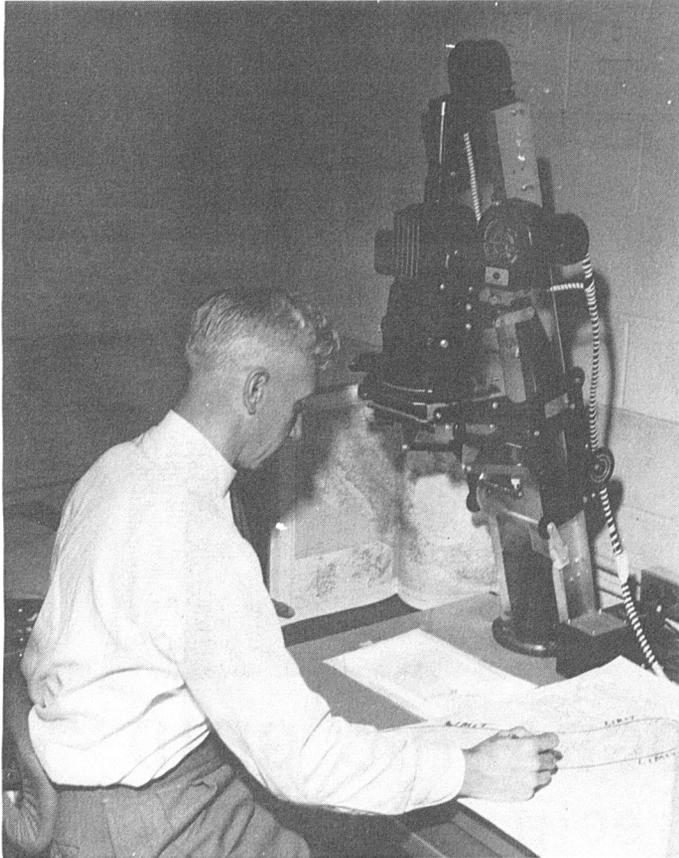


PRODUCES GEOGRAPHIC GRID
for picture rectification



Computer produced grid—actual size
120 325

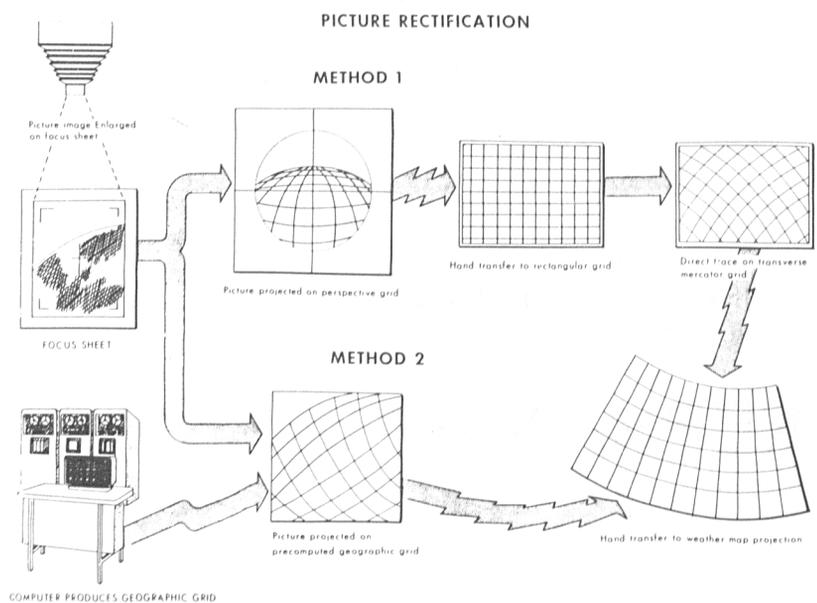
PICTURE RECTIFICATION



Picture is projected on grid, outline of feature transposed to map to produce nephanalysis

Method 1
Perspective
grid used

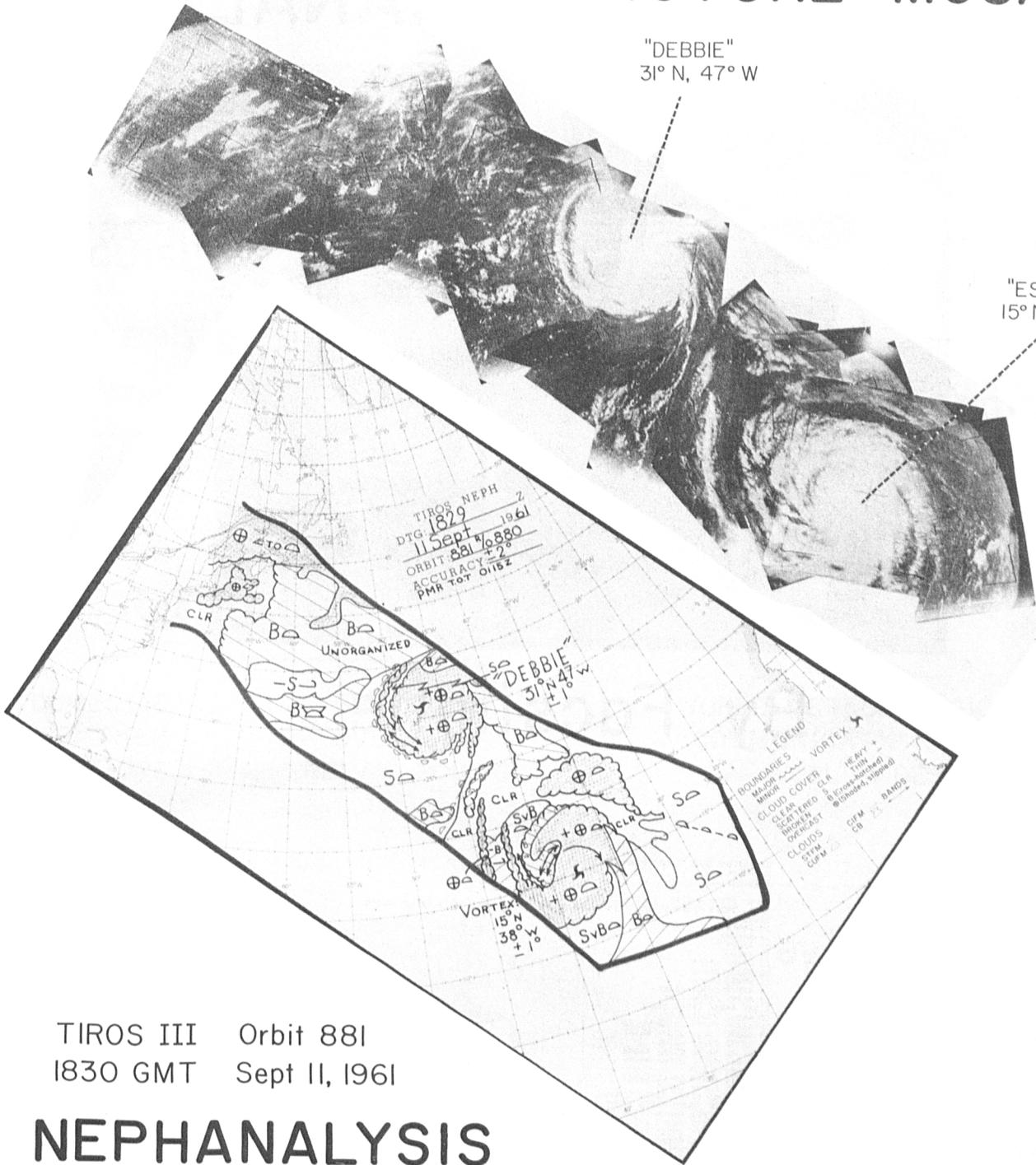
Method 2
Precomputed
grid used



PICTURE MOSAIC

"DEBBIE"
31° N, 47° W

"ESTHER"
15° N, 38° W



TIROS III Orbit 881
1830 GMT Sept 11, 1961

NEPHANALYSIS

TRANSMISSION OF NEPHANALYSIS



By Facsimile

```
RR WEABUR INFO TIROSI RCANWJ METEOR
DE WALLEIA 013
R 190927Z
BT
NEPHAN TIROS 4 0555 19/0545Z C1
AA514 BB214 CC414 DD215 FF114 GG312 JJ216 KK314 LL654 MM319 NN350 VV319#
72120 AAAAA
15 AAQ77
18 AAQ88
17 AAQ88
17 AAQ99
16 BBBBA AAAAA
15 BBQ66 AAAAA
15 FB888 BAAAA
13 AAFFB BRBBA AAAXX
12 AAFF FFBBG GCGGX
75111 AAAAA FFFCC GCGGX
19 AAQ66 JGGG GCGGX
08 AKKKA AAJJJ JGGG GCGGX
05 AABBC CAAA JJJJA AAAAA
03 DDBBB CVKCC AA101
01 DDDDD BBQVV CAAA AAQ88
00 DDQ66 BBCCC CAAA AAQ66
98 DDQ66 LL145
95 MFFKK KKKK DLLL LL101
94 MHHMF DDQ99 LL125
7412 MMQ66 FFDD DD077 LL099
84288 KFFF FMMM MFFD DD088 LL077
85 BBBBK KFFF MHHM FFDD DD088 LLLXX
82 BBQ88 KFFF FMMM FFDD DD101
40 NN280 FF077 BB167 KFFF MHHM FFDD DD077
40 NN279 FFQ88 BB178 KFFF MHHM FFDD DDXXX
40 NN279 FFQ88 BB178 KFFF MHHM MFFDD
40 NN303 FFJBB BB178 KFFF MMQ66 FFFFD
40 NN303 BB224 KFFF FMMM MHHXX
40 ZZ20H NN257 BB224 KFFF FMMM MHHXX
8240 ZZZZZ NN257 BB224 KFFF FMMM
40 ZZQ77 NN255 BB224 KFFF FHHK
40 ZZQ88 NN224 BB225 KFFF
43 ZZ101 NN402 BB225 KFFF
40 ZZ134 NN178 BB257
40 ZZ156 NN156 BB202
40 ZZ156 NN156 BB202
40 ZZ156 NN156 BB178
40 ZZ156 NN156 BB123
BT
19/0934Z MAR
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By Teletype (coded)

DISTRIBUTION OF TIROS DATA

