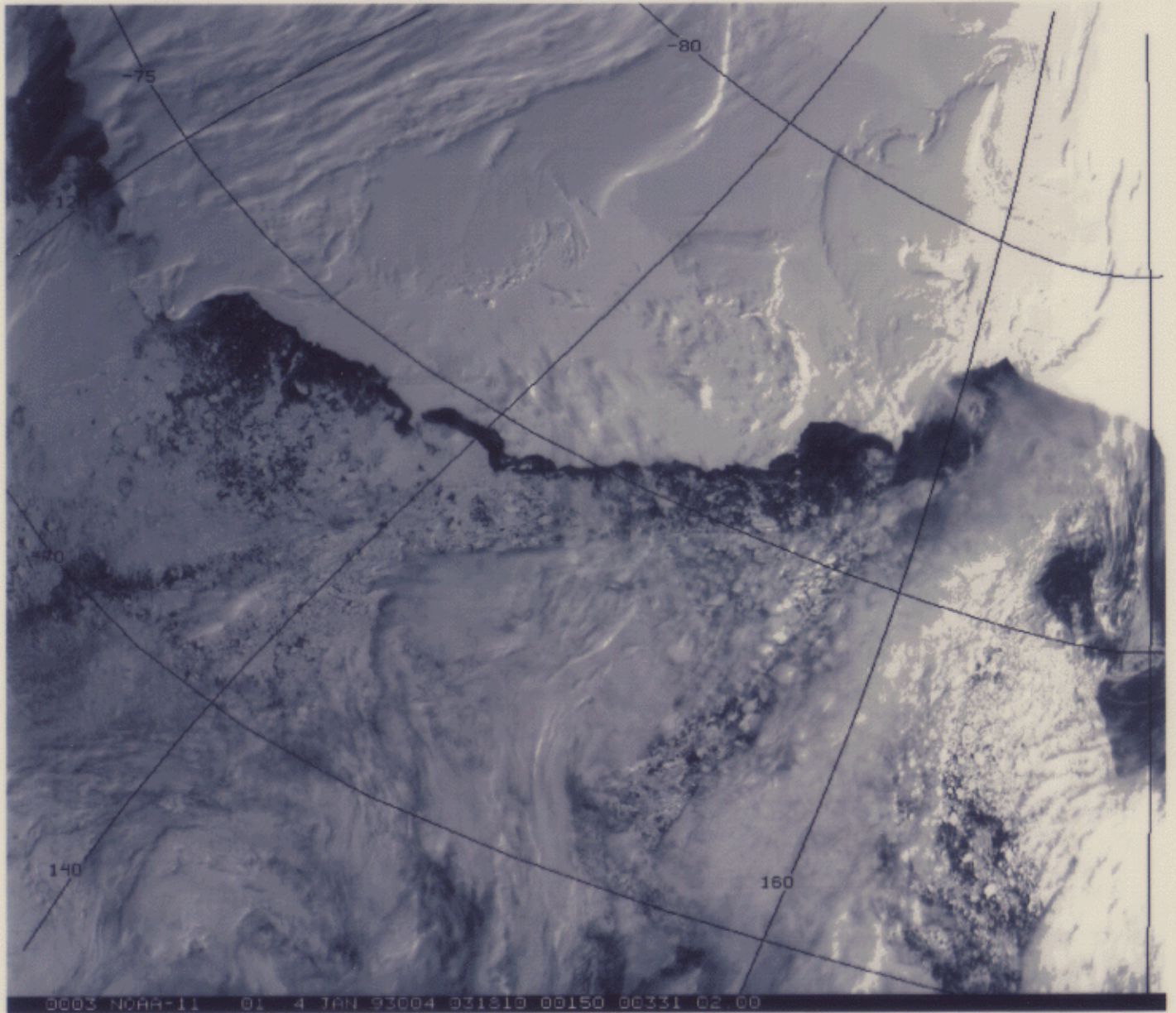


48 BIT CLOUD MASK FILE SPECIFICATION

BIT FIELD	DESCRIPTION KEY	RESULT
0	Cloud Mask Flag	0 = not determined 1 = determined
1-2	Unobstructed FOV Quality Flag	00 = cloudy 01 = probably clear 10 = confident clear 11 = high confidence clear
PROCESSING PATH FLAGS		
3	Day / Night Flag	0 = Night / 1 = Day
4	Sun glint Flag	0 = Yes / 1 = No
5	Snow / Ice Background Flag	0 = Yes / 1 = No
6-7	Land / Water Flag	00 = Water 01 = Coastal 10 = Desert 11 = Land
ADDITIONAL INFORMATION		
8	Non-cloud obstruction Flag (heavy aerosol)	0 = Yes / 1 = No
9	Thin Cirrus Detected (solar)	0 = Yes / 1 = No
10	Shadow Found	0 = Yes / 1 = No
11	Thin Cirrus Detected (infrared)	0 = Yes / 1 = No
12	Spare	
1-km CLOUD FLAGS		
13	Cloud Flag - simple IR Threshold Test	0 = Yes / 1 = No
14	High Cloud Flag - CO ₂ Threshold Test	0 = Yes / 1 = No
15	High Cloud Flag - 6.7 μm Test	0 = Yes / 1 = No
16	High Cloud Flag - 1.38 μm Test	0 = Yes / 1 = No
17	High Cloud Flag - 3.9-12 μm Test	0 = Yes / 1 = No
18	Cloud Flag - IR Temperature Difference	0 = Yes / 1 = No
19	Cloud Flag - 3.9-11 μm Test	0 = Yes / 1 = No
20	Cloud Flag - Visible Reflectance Test	0 = Yes / 1 = No
21	Cloud Flag - Visible Ratio Test	0 = Yes / 1 = No
22	Cloud Flag - Near IR Reflectance Ratio Test	0 = Yes / 1 = No
23	Cloud Flag - 3.7-3.9 μm Test	0 = Yes / 1 = No
ADDITIONAL TESTS		
24	Cloud Flag - Temporal Consistency	0 = Yes / 1 = No
25	Cloud Flag - Spatial Variability	0 = Yes / 1 = No
26-31	Spares	
250-m CLOUD FLAG - VISIBLE TESTS		
32-47	Element(1,1)	0 = Yes / 1 = No

Validation Approaches

- Image analysis
- Field experiments
 - Aircraft missions
 - Ground-based observations
- Global Statistics



0003 NOAA-11 01 4 JAN 93004 031310 00150 00331 02 00

NOAA-11 AVHRR LAC Channel 1

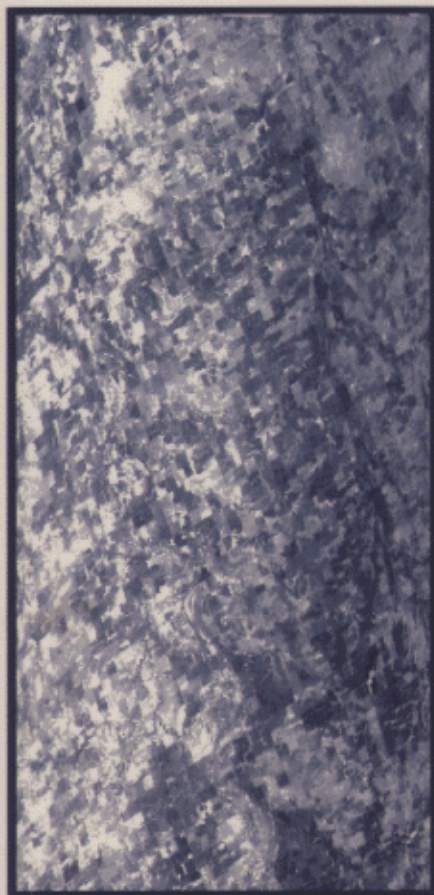
Field Experiments

- *SUCCESS*
- *WINCE*
- *ARMCAS*
- *D.HALL*
- *SCAR-B*
- *TARFOX*

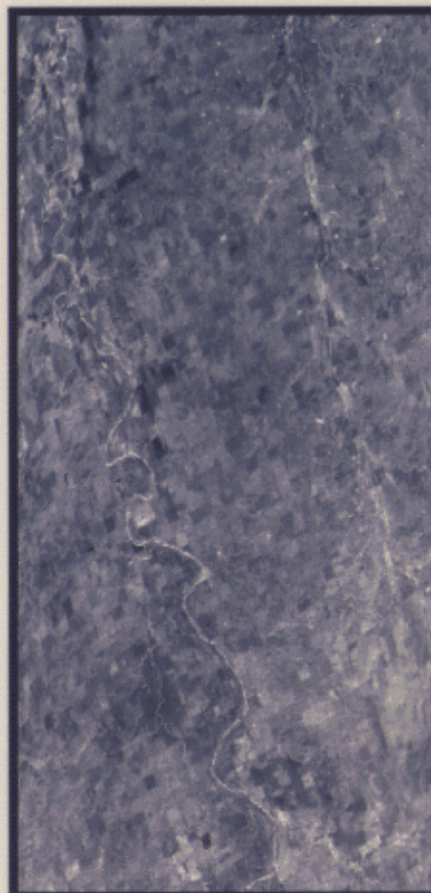
Cloud Mask Example - Clear Land

MAS SUCCESS data over Kansas 13 April 1996 - 18:28 UTC

UW/CIMSS



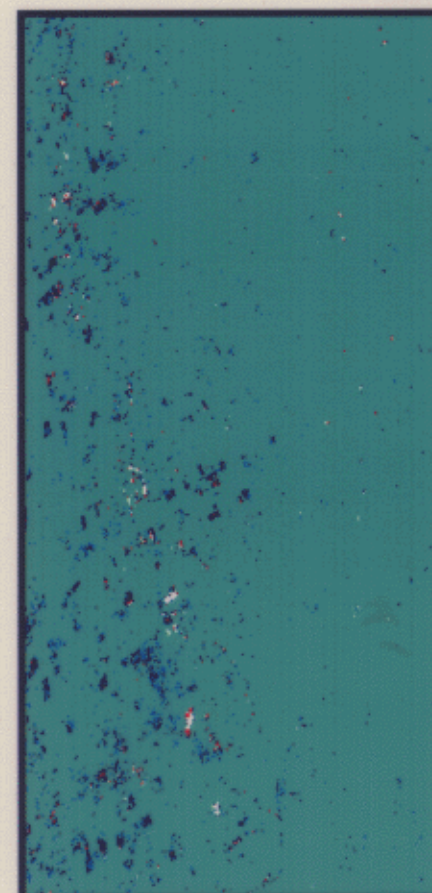
MAS .66 micron Image



MAS 11 micron Image



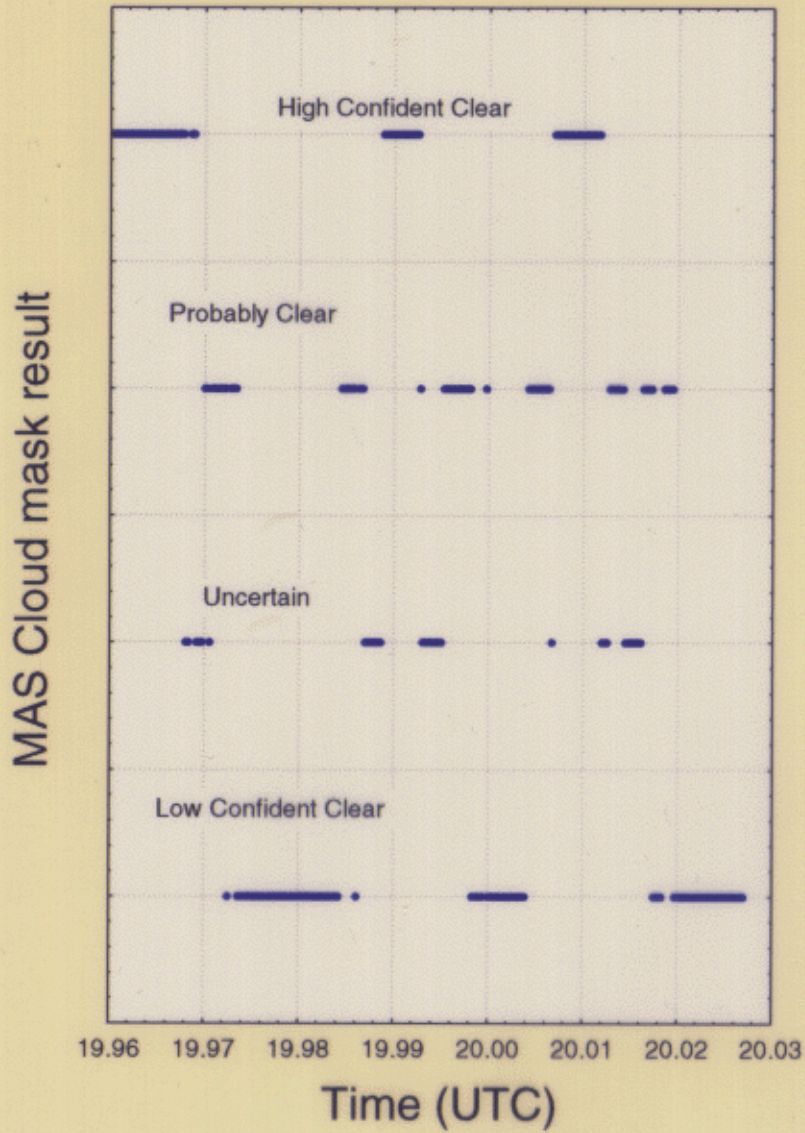
Visible Reflectance Test
Dark Gray - Passed (Clear)
White - Failed (Cloud)



Confidence of Clear Result

Green	- > 99%
Blue	- > 95%
Dark Blue	- > 66%
Red	- > 34%
White	- < 1%

April 26, 1996



Lidar Observations (April 26, 1996)

Provided by J. Spinhirne

