Proposed

10/9/96

High Temporal Resolution
Products for AM1 Instruments

	Data Type			Assimilation	Assimilation	Assimilation	Assimilation	Assimilation	Assimilation	Assimilation	Assimilation
	Temporal Resolution			10 min	1hr	3 hr	1 hr	1 hr	3 hr	3 hr	3 hr
	Levels (type)			Single Level	Single Level	Single Level	Mandatory Press	Mandatory Press	Mandatory Pres	Model Sigma	Model Sigma
	Levels (#)			1	1	1	lowest 12	24	24	lowest 35	70
Units	Method of Data Insertion			IAU	IAU	IAU	IAU	IAU	IAU	IAU	IAU
	To get 1-day fib size [at 1 X 1deg resolution]: 4 bytes X 180 X 360 X (# times/day) X (# levels)										
	To get 1-day file size [at 2 X 2.5 resolution] divide the above number by 5										
		DAS#	Name								
	Precip and Moisture										
none (0-1)	Soil Moisture (shallow)	02	SMSHAL			X					
none (0-1)	SON Moisture (root)	02	SMROOT			X					
none (0-1)	Soil Moisture (deep)	02	SMDEEP			X					
g/kg	Canopy Air Specific Humidity			X							
g/kg	Near-Surface Specific Humidity	05	Q2M	X							
g/kg		05	Q10M	X							
g/kg	Specific Humidity Profile	05	SPHU				X			X	
gm/cm**2	Precipitable Water	08	QINT		X						
mm/day	Total Precipitation	09	PREACC			X					
mm/day	Convective Precipitation	09	PRECON			X					
mm	Snow Depth	10	SNDPTH			X					
	Clouds, Aerosols, & Radiation										
mb	Cloud Top Pressure		CLDPRS		X						
deg K	Cloud Top Temperature		CLDTMP		X						
1/m	Cloud Optical Depth "'		TAU				X			X	
1/m	Low Cloud Optical Depth		TAULO		X						
1/m	Mid Cloud Optical Depth		TAUMID		X						
1/m	High Cloud Optical Depth		TAUHI		x						
w/m**2	Outgoing SW Radiation	16	OSR		X						
w/m**2	Outgoing SW Radiation, Clear Sky	16	OSRCLR		X						
none (0-1)	Albedo - NIR, Diffuse	19	ANIRDF		X						
none (0-1)	Albedo - NIR, Direct	19	ANIRDR		X						
none (0-1)	Albedo - Vis, Diffuse	19	AVISDF		X						
none (0-1)	Albedo - Vis, Direct	19	AVISDR		X						
mg/kg	Cloud Liquid Water		LZRAD				X			X	
	Land & Ocean Surface Temps										
deg K	Surface Ground Temperature	35	GTMP	X							
	Boundary Conditions										
none	Land, Water, Ice Flags	01	LWI			X					
	Air Temperature										
deg K	Temperature (2 meters)	20	T2M	X							
deg K	Temperature (10 meters)	20	T10M	X							
deg K	Temperature Profile	20	TMPU					X			X
deg K	Tropopause Temperature	23	TROPT		X						
	Pressure & Heights										
(m/sec)**2	Surface Geopotential Height	34	PHIS		X						
mb	Surface Pressure - PTOP	33	PSPTOP		X						
mb	Sea Level Pressure	33	SLP		X						
m	Upper Air Geopotential Heights	34	HGHT						X		
mb	Tropopause Pressure	23	TROPP		X						
	Winds										
m / s e e	Winds at 2 meters	25	U2M		X						
m/see		25	V2M		X						
m/see	Winds at 10 meters	25	U10M		X						
m/see		25	V10M		x						
	Chemical Constituents										
ppmv	Ozone Profile		OZONE						X		
Total											
232	Size for one day (MB) (2 X 2.5 deg resolution)			43	25	s -	43	29	19	42	28
1162	Size for one day (MB) (1 X 1 deg resolution)			216	126	14	216	144	96	210	140

DAO Products (1998)

Table A-110/9/96

	Data Type			Assimilation	Assimilation	Assimilation	Increments	Analysis	First Guess	Observations	Swath	10-Day FCST*
	Frequency (per day)			8	4	4	4	4	4	4	4	1
	Levels (type)			Single Level	Mandatory Pres	Model Sims	Model Sigma	Mandatory Pres	Mandatory Pres	Varied	andatory Pres	Mandatory Pres
	Levels (#)			1	24	70	70	24	24		24	24
Units	Method of Data Insertion			IAU	IAU	IAU	IAU	Single	IAU + 3 hr Fcst	Single	IAU	Fcst
	To get fife size [at 1X 1 deg resolution]: 4 bytes X 180			360 X (#times/day) X (#levels								
	To get file size [at 2 x 2.5 resolution] divide the above r			ber by 5								
		DAS#	Name									
	Precip and Moisture											
none (0-1)	Soil Moisture (shallow)	02	SMSHAL	X							X (1level)	
none (0-1)	Soil Moisture (root)	02	SMROOT	X							X (1level)	
none (0-1)	Soil Moisture (deep)	02	SMDEEP	X							X (1 level)	
mm/day	Surface Evaporation	04	EVAP	X								
g/kg	Saturation Surface Specific Humidity	03	QS	X							X (1 level)	
g/kg	Near-Surface Specific Humidity	05	Q2M	X						X	X (1level)	
g/kg		05	Q10M	X						X	X (1level)	
g/kg	Specific Humidity Profile	05	SPHU		X	X	X			X	X	X
g/kg/day	Moisture Change due to Turbulence	06	TURBQ		X	X						
g/kg/day	Moisture Change due to Moisture	06	MOISTQ		X	X						
(m/sec)(g/kg)	Vertically Integrated U*Q	07	VINTUQ	X								
(m/sec)(g/kg)	Vertically Integrated V*Q	07	VINTVQ	X								
g/kg	Mixing Ratio Profile	05	MIXR					X	X	X		
g/kg	Mixing Ratio Profile (errors)	05	MIXRE					X	X		X	
% (0-100)	Relative Humidity Profile	05	RH					X	X	X		
gm/cm**2	Precipitable Water	08	QINT	X						X	X (1level)	
mm/day	Total Precipitation	09	PREACC	X						X	X (1 level)	X (1level)
mm/day	Convective Precipitation	09	PRECON	X							X (1level)	X (1 level)
mm	Snow Depth	10	SNDPTH	X							X (1 level)	X (1 level)
	Clouds, Aerosols, & Radiation											
none (0-1)	2-D Cloud Fraction	11	CLDFRC	X							X (1 level)	X (1 level)
kg*m/sec**2	Cloud Mass Flux	12	CLDMAS			X						
kg*m/sec	Convective Cloud Detrainment	12	DTRAIN			X						
none (0-1)	Random Overlap Cloud Fraction for LW	11	CLROLW			X					X	X
deg/day	Clear Sky LW Heating Rate	13	LWCLR			X						
deg/day	Clear Sky SW Heating Rates	13	SWCLR			X						
w/m**2	Outgoing LW Radiation	15	OLR	X								
w/m**2	Outgoing LW Radiation, Clear Sky	15	OLRCLR	X								
w/m**2	Incident SW Radiation Top of Atmos	17	RADSWT	X								
w/m**2	Surface LW Flux, Clear Sky	16	LWGCLR	X								
w/m**2	Outgoing SW Radiation	16	OSR	X							X (1level)	
w/m**2	Outgoing SW Radiation, Clear Sky	16	OSRCLR	X							X (1level)	
w/m**2	Downward IR	18	LWDNG	X								
w/m**2	Downward Vie	18	VISDNG	X								
none (0-1)	Albedo - NIR, Diffuse	19	ANIRDF	X							X (1 level)	
none (0-1)	Albedo - NIR, Direct	19	ANIRDR	X							X (1 level)	
none (0-1)	Albedo - Vis, Diffuse	19	AVISDF	X							X (1 level)	
none (0-1)	Albedo - Vis, Direct	19	AVISDR	X							X (1level)	
w/m**2	Surface Flux Sensible Heat	14	HFLUX	X								
w/m**2	Surface SW Flux, Clear Sky	18	SWGCLR	X								
w/m**2	Net Upward LW Radiation at Ground	18	RADLWG	X								
w/m**2	Net Downward SW Radiation at Ground	18	RADSWG	X								

			Assimilation	Ass...	Ass...						
			8	7	7	4	4	4	4	4	1
			Single Level	Mandatory Pres	Model Sigma	Model Sigma	Mandatory Pres	Mandatory Pres	Varied	Mandatory Pres	Mandatory Pres
			1	24	70	70	24	24		24	24
			IAU	IAU	IAU	IAU	Single	IAU + 3 hr Fcst	Single	IAU	Fcst
perature	35	GTMP	X							X (1 level)	X (1 level)
nd Temperature	35	GTAVE	X								
perature	35	TVSFC					X	X			
	35	STDEEP	X								
& Trop Chem											
n Phytoplankton											
oductivity											
s											
gs	01	LWI	X								
ature	20	TS	X						X	X (1 level)	X (1 level)
ters)	20	T2M	X						X	X (1 level)	X (1 level)
eters)	20	T10M	X						X	X (1 level)	X (1 level)
	20	TMPU		X	X	X	X	X	X	X	X
e due to turbulence	21	TURBT		X	X						
e due to moisture	21	MOISTT		X	X						
e due to LW rad	21	RADLW		X	X						
e due to SW rad	21	RADSW		X	X						
d U*T	22	VINTUT	X								
d V*T	22	VINTVT	X								
rature	23	TROPT	X							X (1 level)	X (1 level)
s											
al Height	34	PHIS	X				X (1 level)	X (1 level)	X	X (1 level)	
PTOP	33	PSPTOP	X							X (1 level)	X (1 level)
ce Pressure - PTOP	33	PAVE	X								
	33	PSFC				X (1 level)	X (1 level)	X (1 level)	X	X (1 level)	X (1 level)
	33	SLP	X				X (1 level)	X (1 level)	X		X (1 level)
(error)	33	PRSE					X (1 level)	X (1 level)			
endency	33	DPDT	X								
tial Heights	34	HGHT		X			X	X	X	X	X
tial Heights (error)	34	HGHTE					X	X		X	
opotential Heights	34	PHGHT			X						
re	23	TROPP	X							X (1 level)	X (1 level)

Table A-1 10/9/96

	Data Type			Assimilation	Assimilation	Assimilation	Increments	Analysis	First Guess	Observations	Swath	10-Day FCST*
	Frequency (per day)			8	4	4	4	4	4	4	4	1
	Levels (type)			Single Level	Mandatory Pres	Model Sigma	Model Sigma	Mandatory Pres	Mandatory Pres	Varied	Mandatory Pres	Mandatory Pres
	Levels (#)			1	24	70	70	24	24		24	24
Units	Method of Data Insertion			IAU	IAU	IAU	IAU	Single	IAU + 3 hr Fcst	Single	IAU	Fcst
		DAS#	Name									
	Winds											
m/see	Sea Level Winds	24	SLU					X	X	X	X (1 level)	X (1 level)
m/see		24	SLV					X	X		X (1 level)	X (1 level)
m/see	Surface Wind Speed	24	WINDS	X							X (1 level)	
m/see	Vertically Integrated Winds (Barotropic)	27	UBAR	X								
m/sec		27	VBAR	X								
m/sec	Upper Level Winds	25	UWIND		X	X	X	X	X	X		X
m/sec		25	VWIND		X	X	X	X	X	X		X
m/sec	Winds at 2 meters	25	U2M	X						X		X (1 level)
m/see		25	V2M	X						X		X (1 level)
m/see	Winds at 10 meters	25	U10M	X						X		X (1 level)
m/see		25	V10M	X						X		X (1 level)
m/see	Upper Level Winds (error)	25	UWNDE					X	X			
m/see		25	VWNDE					X	X			
(m/sec)**2	Turbulent Kinetic Energy	28	QQ		X	X						
m/see/day	Momentum Changes due to Turbulence	28	TURBU		X	X						
m/sec/dW		28	TURBV		X	X						
mb/day	Vertical Velocity	26	OMEGA		X	X						
n/m**2	Surface Stress	29	UFLUX	X								
n/m**2		29	VFLUX	X								
m/sac	Surface Drag	31	CT	X								
m/see		31	CU	X								
m/see	U Star	29	USTAR	X								
mb	PBL Depth	32	PBL	X								
m	Surface Roughness	30	Z0	X								
	Chemical Constituents											
ppmv	Ozone Profile		OZONE					X			X	
ppbv	CO Profile		co					X				
	NOTE all file sizes based on 1X 1 deg resolution											
	Size for one day (MB)			122	373	1,452	291	377	328	500	1100	1,690
	Total size for 1 day first-look analysis (GB)		4.54	✔	✔	✔	✔	✔	✔	✔	✔	
	Total size for 1 day final platform analysis (GB)		3.44	✔	✔	✔	✔	✔	✔	✔		
	Total output for 110-day forecast (GB)**		19.47	✔	✔	✔						
	Total archive for 110-day forecast (GB)		1.69									✔

* This column lists only those 10-day forecast products that are permanently archived.

** The full output from the 10-day forecast is only saved for 30 days.