TOAST, Blended UV and IR Gridded 1° Ozone Products

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Current available TOAST products from OSPO

- Current operational TOAST for TOVS + SBUV
- Current operational eTOAST v03 for CrIS + SBUV

Archives of TOAST and eTOAST

- **TOAST archived (available from 2007 ~ current):**

  /net/www/aftp/pub/smcd/spb/ozone/toast/data/
  "TOAST": TOAST blended total ozone (toast_yyyymmdd.bin)
  "SBUV" : objective analyzed SBUV layer & total ozone (sbuv_yyyymmdd.bin)
  "TOVS" : objective analyzed TOVS total ozone (tovs_yyyymmdd.bin)
  "UTLS" : objective analyzed TOVS's UTLS total ozone (tovsutls_yyyymmdd.bin)
  "TOAST/GRIB": TOAST blended total ozone in GRIB format (TOAST_yymmdd.grb)
  …
  DVD archived 2002 ~ 2006 TOAST data (contact to eric.beach@noaaa.gov)

- **eTOAST archived (available from 2015 ~ current):**

  /net/www/aftp/pub/smcd/spb/ozone/etoast/data/
  "ETOAST": eTOAST blended total ozone (TOAST_Blended-bin_CRIS_N19_SBUV_yyyymmdd.bin)
  "SBUV" : objective analyzed SBUV layer & total ozone (TOAST_UV-bin_N19_SBUV_yyyymmdd.bin)
  "CRIS" : objective analyzed CRIS total ozone (TOAST_IR-bin_SNP_CRIS_yyyymmdd.bin)
  "UTLS" : objective analyzed CrIS's UTLS total ozone (etoast_crisftls_yyyymmdd.bin)
  "GRIB" : eTOAST blended total ozone in GRIB format
  (TOAST_Blended-grb_SNP_CRIS_N19_SBUV_yyyymmdd.grb)

Both products were saved in big endian binary format

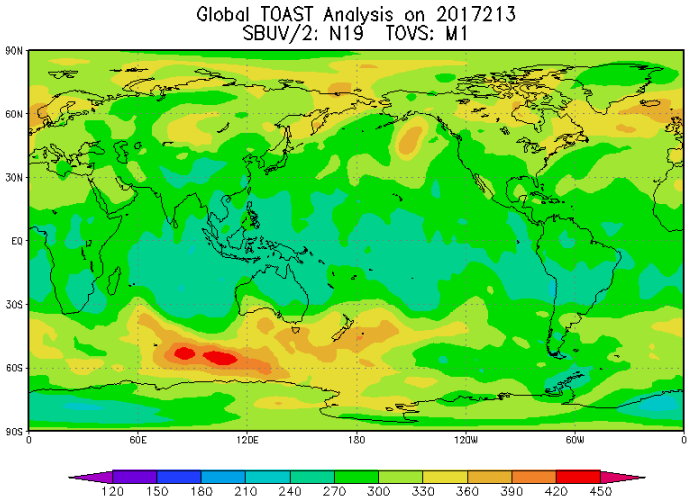
TOAST

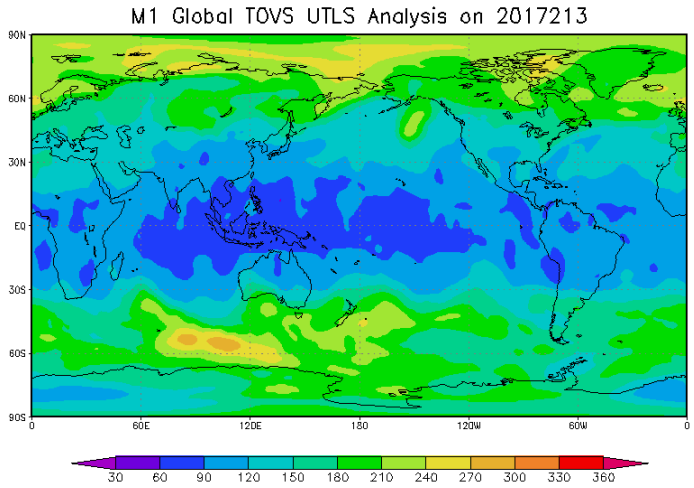
	Product	Unit	Dimes.	size
TOAST	VCD	DU	360 x 181	260640
TOVS	VCD	DU	360 x 181	260640
TOVS	UTLS	DU	360 x 181	260640
SBUV	VCD & PROF.	DU	360 x 181 x 13	3388320

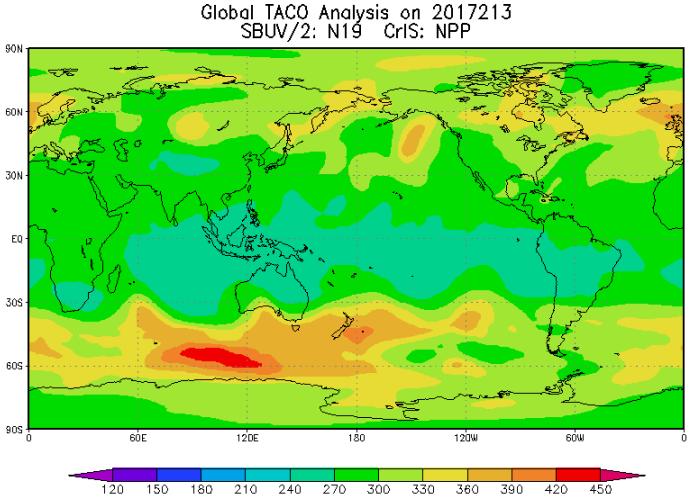
eTOAST-V03

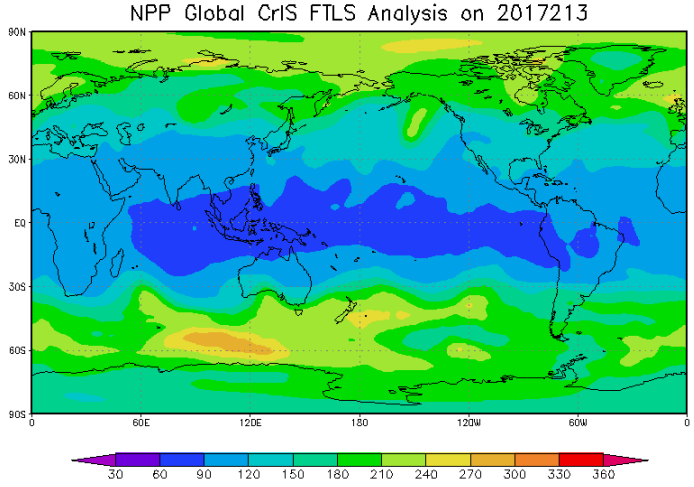
	Product	Unit	Dimens.	Size
eTOAST	VCD	DU	360 x 181	260640
CrIS	VCD	DU	360 x 181	260640
CrIS	FTLS	DU	360 x 181	260640
SBUV	VCD & PROF.	DU	360 x 181 x 13	3388320

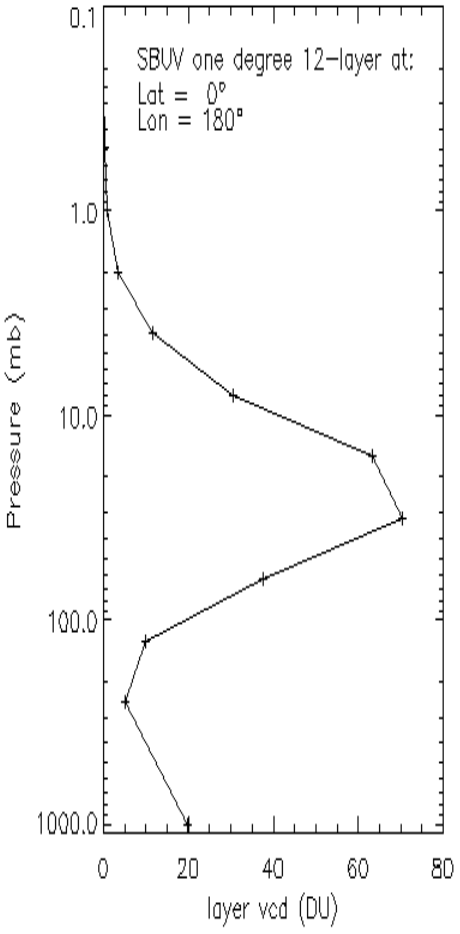
Current available TOAST products (Aug. 1, 2017)











eTOAST future

- Future eTOAST-v04 for CrIS + V8PRO
- Future eTOAST-v05 for CrIS + Limb (12 layer analysis)
- Future eTOAST-v05.100 for CrIS + Limb 100 layer analysis
- eTOAST v05.2, as a local supporting version, has been prepared to validate eTOAST v05, using CrIS and PEATE Limb L2 daily data to provide similar product as eTOAST v05.

Future products (little endian currently)

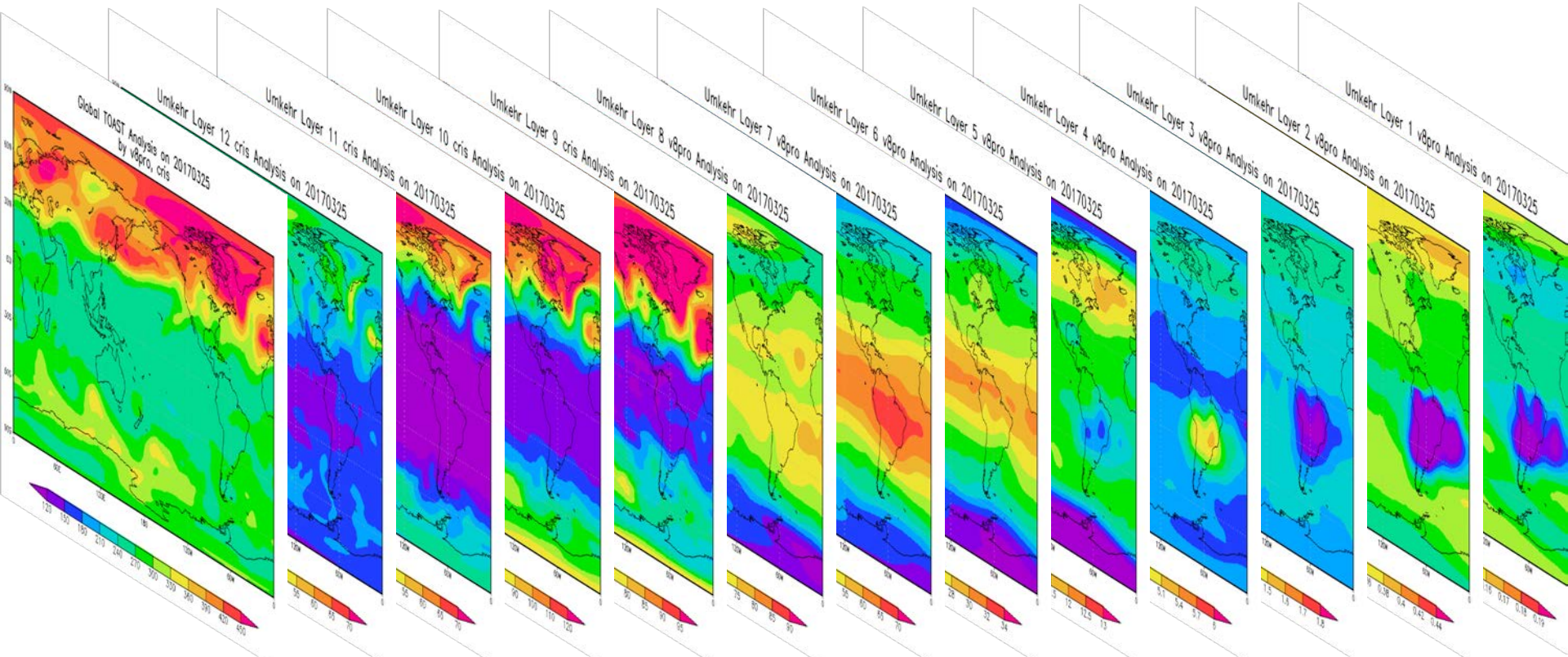
eTOAST-v04

	Product	Unit	Dimens.	Size
eTOAST	VCD	DU	360 x 181	260640
CrIS	FTLS	DU	360 x 181	260640
CrIS	VCD & PRO	DU	360 x 181 x 13	3388320
V8PRO	MSUS	DU	360 x 181	260640
V8PRO	UVPRO	DU	360 x 181 x 13	3388320

eTOAST-v05

	Product	Unit	Dimens.	Size
eTOAST	VCD	DU	360 x 181	260640
CrIS	FTLS	DU	360 x 181	260640
CrIS	VCD & PRO	DU	360 x 181 x 13	3388320
LIMB	MSUS	DU	360 x 181	260640
LIMB	Limb PRO	DU	360 x 181 x 13	3388320

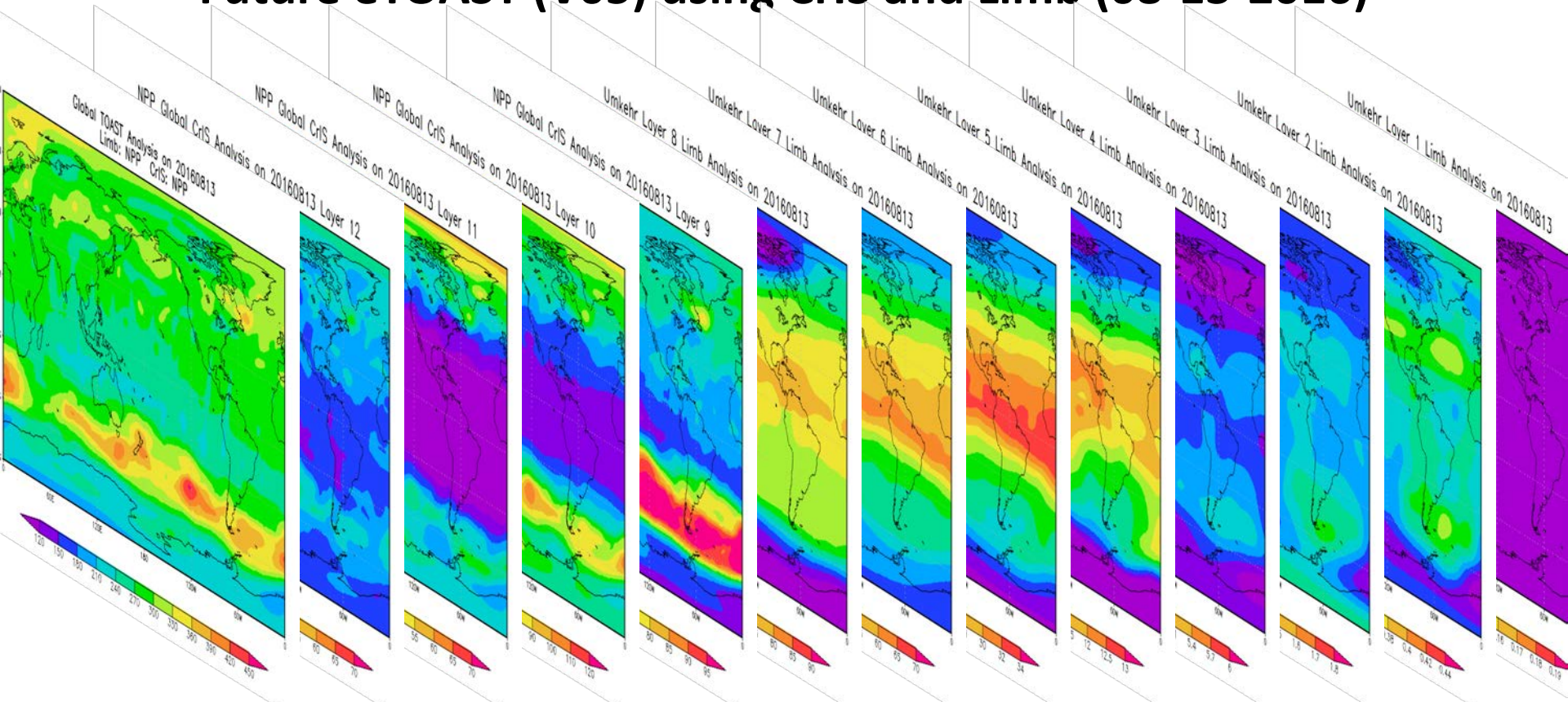
Future eTOAST (V04) using CrIS and V8PRO (03-25-2017)



TACO total amount	1013	253	127	63.3	31.7	15.8	7.93	3.96	1.98	0.99	0.5	0.25 mb

TOAST = ***CrIS*** ***+*** ***V8PRO***

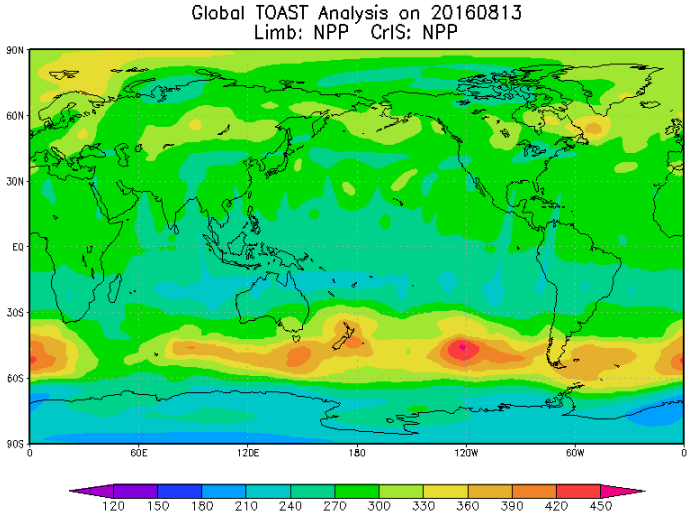
Future eTOAST (V05) using CrIS and Limb (08-13-2016)

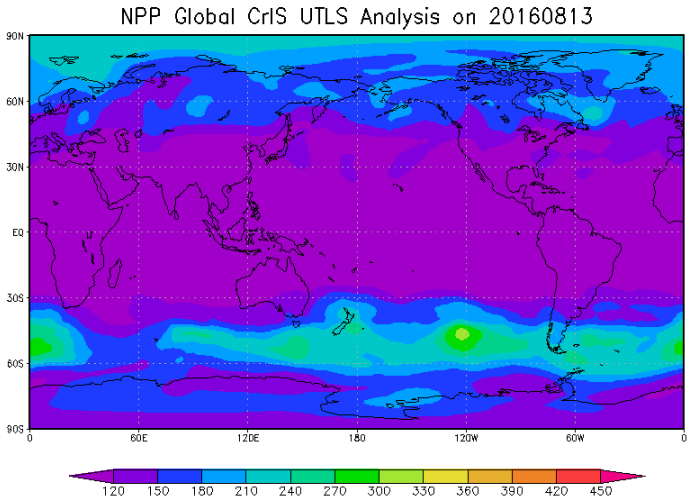


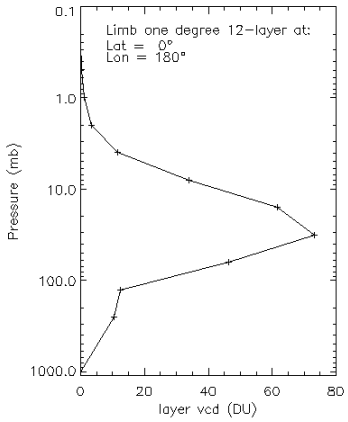
TACO total amount	1013	253	127	63.3	31.7	15.8	7.93	3.96	1.98	0.99	0.5	0.25 mb

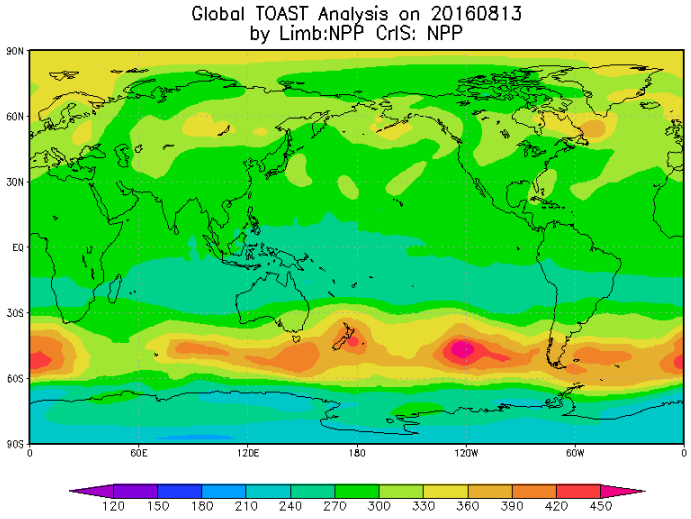
TOAST= ***CrIS*** ***+*** ***OMPS /Limb***

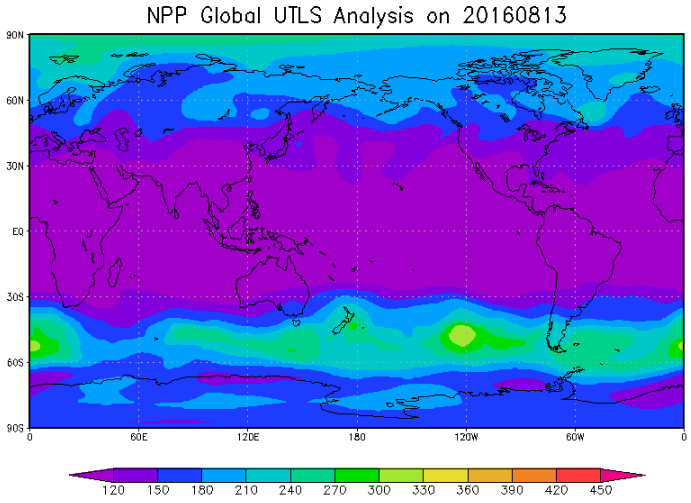
Future available Limb eTOAST-v05 and v05.100 products

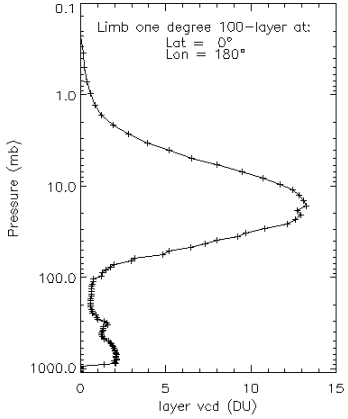












Future plan

- Steven Bucker (UMBC) is working on using the OMPS Limb profile 100 layer analysis as an a priori for CrIS NUCAPS ozone combined retrieval.

- eTOAST-V04 and eTOAST-V05 is going to be operational products at NDE.

- The legacy code need to be rewritten; there are lots of GOTOs and output files need to be reorganized

Data reorganize is planed

eTOAST-v04

	Product	Unit	Dimens.	Size
eTOAST	VCD	DU	360 x 181	260640
CrIS	VCD & FTLS & PRO	DU	360 x 181 x 14	3648960
V8PRO	UVPRO & MSUS	DU	360 x 181 x 14	3648960

eTOAST-v05

	Product	Unit	Dimens.	Size
eTOAST	VCD	DU	360 x 181	260640
CrIS	VCD & FTLS & PRO	DU	360 x 181 x 14	3648960
LIMB	Limb PRO & MSUS	DU	360 x 181 x 14	3648960

THANKS