Synoptic SARB Action Items for TRMM Beta4/Terra Beta 3 Operational Software Delivery

Table 1: General Synoptic SARB TRMM Beta4/Terra Beta3 Delivery Information

Row Number	Information Description	Detail
1	Targeted Delivery Date	Not yet scheduled
2	SCCR number	634
3	Software Included in delivery package	Synoptic SARB unique code SARBlib
4	CERESlib Delivery	CERESlib Module SYNI_IO.f90 (SCCR Number 623)
5	SARB PGE(s) included in delivery	PGE CER7.2.1P1
6	Sample Read Package	Continue with Terra Ed2B and Aqua Beta1 sample read package currently distributed with orders
7	Other Affected Subsystems	TISA SS8 - new SYNI data structure
8	Documentation Updates	Test Plan Operator's Manual Data Products Catalog - SYNI pages
9	Subject Matter Experts	Tom Charlock, Fred Rose, Dave Rutan, Wenying Su

Table 2: Synoptic SARB TRMM Beta4/Terra Beta3 Delivery Action Items

Action Item	Requirement Definition	Status Update	Verification of completion
Implement SARB Requirement 7.2-1.0	Top-level require-ment for delivery	Email 11. F. Rose giving preliminary approval	Email 12.
Implement SARB Requirement 7.2-1.1	Email 3.- included morning email from D. Rutan	Email 3. Afternoon email from S. Zentz reporting implementation com-plete Email 14. Identifies there was more to be done. Email 16. Developer verifies code.	Email 18.

Table 2: Synoptic SARB TRMM Beta4/Terra Beta3 Delivery Action Items

Action Item	Requirement Definition	Status Update	Verification of completion
Implement SARB Requirement 7.2-1.2	Email 1.	Email 2. Asking for clarification Email 5. Notifying F. Rose of available results	Email 14.
Implement SARB Requirement 7.2-1.3		Email 4. S. Zentz status report	Email 17.
Implement SARB Requirement 7.2-1.4	Email 6. Add Ozone to archival data structure	Email 14. Identifies this was not done.	Email 15.
Implement SARB Requirement 7.2-1.5	Email 7. Add aerosol heirarchy based on Instantaneous SARB	Email 9. PROBLEM identified	Email 14.
Implement SARB Requirement 7.2-1.6	Email 8. (1st email) Implement use of 3-hourly skin temperature	Email 8. (2nd-or first included-email) T. Caldwell seeking guidance	Email 12.
Implement SARB Requirement 7.2-1.9	Email 13.		Email 14.
Update Documentation (Table 1, Row 8)			Email 19. Operator's Manual

Email 1.

Date: Tue, 19 Jul 2005 15:10:58 -0400
From: Fred Rose <f.g.rose@larc.nasa.gov>
To: Dave Doelling <d.r.doelling@larc.nasa.gov>,
Dave Young <David.F.Young@nasa.gov>
CC: l.h.coleman@larc.nasa.gov, Wenying Su <w.su@larc.nasa.gov>,
thomas.p.charlock@nasa.gov
Subject: Re: adding parameters to SYN SARB

Dave and Dave

Can TISA bear the cross for adding to our SYN...

This asks the question of TISA...
SYNI has a direct/diffuse ratio as one output parameter, today
we discussed adding other direct/diffuse ratios to SYNI

Is and will in the future TISA decompose
(Dir+Dif) aka SW Down and (Dir/Dif Ratio) given as 2 SYNI output parameters
into DIR and DIF using the relation

Dif = (Dir+Dif) / (1 +Dir/Dif)
Dir = (Dir+Dif) -Dif

on an Hour by Hour basis before recombining into a 3hr average (Dir/Dif Ratio)

As you probably guessed the answer can be different depending on method.

Hr1: Dir/Dif = 300/100 = 3
Hr2: Dir/Dif = 0 /400 = 0

If you just average the ratios you get 1.5

If you decompose in to Direct and Diffuse,
Average the componets and then form a ratio
you get 0.6

l.h.coleman@larc.nasa.gov wrote:
>
> Wenying,
>
> Let's assume the normal 32-bits (4 bytes) per parameter
> per region per hour, at 360 regions per 1-deg latitudinal
> zone and 744 hours. That gives us 1.02 MB per parameter
> per zone per month. There are 180 zones, so that gives

> us 183.91 MB globally per month per parameter. Two
> parameters will add 367.82 MB, and four parameters will
> add 735.64 MB globally for a month.
>
> These numbers are for the binary versions of the product.
> The HDF versions use compression techniques that probably
> cut those number is half. Many here at Langley use the
> binary version, but users outside of Langley must
> use the HDF version.
>
> The binary version is also stored on the nested grid, meaning
> that the space used is 66% of the 735.64 MB, or 485.53 MB total
> for a month for the binary.
>
> Let me know if I can help with anything else.
>
> Lisa
>
> On Jul 19, 2:07pm, Wenying Su wrote:
> > Subject: adding parameters to SYN SARB
> > Lisa,
> >
> >   We are going to add two more variables to the SYN PAR. One is
> > the canopy action PAR, and the other is chlorophyll a absorbed PAR.
> > We are considering adding their Dir/Diff ratios too. We would like to
> > know how much these two parameters will expand you dataset before we
> > make the final decision.
> >
> > Thanks,
> >
> > Wenying
> >
> > CC: Tom, Fred
> >-- End of excerpt from Wenying Su

Email 2.

Date: Thu, 29 Sep 2005 12:04:09 -0400
To: Fred Rose <f.g.rose@larc.nasa.gov>, l.h.coleman@larc.nasa.gov,
      "Scott M. Zentz" <szentz@saisun18.larc.nasa.gov>,
      Wenying Su <w.su@larc.nasa.gov>, David Rutan <d.a.rutan@larc.nasa.gov>
From: Tom Charlock <Thomas.P.Charlock@nasa.gov>
Subject: List of PAR parameters for SYN and CRS SARB

Fred,

Here are the PAR parameters that Wenying and I agreed on.
fI you need more clarity, than what's below, please sound off.

For SYN:

PAR_400:700TotSky Tuned
DirDiff_PAR_400:700TotSky Tuned
PAR_Purv_TotSky Tuned
DirDiff_PAR_Purv_TotSky Tuned
PAR_ChorlA_TotSky Tuned
DirDiff_PAR_ChlorA TotSky Tuned

PAR_400:700 ClearSky Tuned
DirDiff_PAR_400:700 ClearSky Tuned

PAR_400:700 Pristine sky Tuned
DirDiff_PAR_400:700 Pristine sky Tuned

We thought that untuned fluxes would not be needed.
We did not discuss "CNA" (which our designation for
total sky without aerosols), but I think they are also not needed.

For CRS, all that we need is a replacement for the present total-sky
PAR as Fu-Liou bands 8:10. The CRS replacement (i.e., Aqua Edition) is:

PAR_400:700TotSky Tuned

Tom

At 10:28 AM -0400 9/29/05, Fred Rose wrote:
>Scott,Lisa
>
>I'm sorry for lack of clarity. A full suite of
>outputs was included in the Fu code for completeness
>but to add all of them is a bit much.
>Direct/Diffuse should always be added as a ratio
>since from 2 quantities DIR/DIF and DIR+DIF ,
>3 quantities Dir ,Dif and Dir+Dif can be computed..
>
>I've asked Tom Charlock to formally state
>which PAR UV parameters should be included in CRS and SYN.
>
>

>
>l.h.coleman@larc.nasa.gov wrote:
>>
>> Fred,
>>
>> Like I said earlier, if we had final confirmation of what is written
>> to the archival product, we lost it. The modified structures internal
>> to the code have been in place.
>>
>> Thanks for letting us know for sure.
>> Lisa
>>
>> On Sep 29, 9:58am, Scott M. Zentz wrote:
>> > Subject: Re: [Fwd: Re: adding parameters to SYN SARB]
>> > Fred,
>> >
>> > I have already added 24 parameters to
>>sarb_params.f90 which will only effect SYN
>> > currently. Them being:
>> >
>> > TYPE Spectral_TYPE_FOV
>> > SEQUENCE
>> > REAL :: Broad_SW_Diff_TotSky
>> > REAL :: Broad_SW_Diff_ClrSky
>> > REAL :: Broad_SW_Diff_PrsSky
>> > REAL :: Broad_SW_Diff_CNASky
>> > REAL :: Broad_SW_Dir_TotSky
>> > REAL :: Broad_SW_Dir_ClrSky
>> > REAL :: Broad_SW_Dir_PrsSky
>> > REAL :: Broad_SW_Dir_CNASky
>> > END TYPE Spectral_TYPE_FOV
>> >
>> > TYPE UVA_UVB_TYPE
>> > SEQUENCE
>> >
> > > REAL (real4) :: PAR_Purv_TotSky !
> > > REAL (real4) :: DirDiff_PAR_Purv_TotSky !
>> > REAL (real4) :: PAR_ChlorA_TotSky !
>> > REAL (real4) :: DirDiff_PAR_ChlorA_TotSky !
>> >
>> > REAL (real4) :: PAR_Purv_ClrSky !
>> > REAL (real4) :: DirDiff_PAR_Purv_ClrSky !
>> > REAL (real4) :: PAR_ChlorA_ClrSky !
>> > REAL (real4) :: DirDiff_PAR_ChlorA_ClrSky !
>> >
>> > REAL (real4) :: PAR_Purv_PrsSky !

>> > REAL (real4) :: DirDiff_PAR_Purv_PrsSky !
>> > REAL (real4) :: PAR_ChlorA_PrsSky !
>> > REAL (real4) :: DirDiff_PAR_ChlorA_PrsSky !
>> >
>> > REAL (real4) :: PAR_Purv_CNASky !
>> > REAL (real4) :: DirDiff_PAR_Purv_CNASky !
>> > REAL (real4) :: PAR_ChlorA_CNASky !
>> > REAL (real4) :: DirDiff_PAR_ChlorA_CNASky !
>> >
>> > END TYPE UVA_UVB_TYPE
>> >
>> >
>> > Is this what I was supposed to do? There
>>still seems to be some confusion on
>> > this. These two structures are only used in SYN, also they have alot more
>> > paramters in them I just chose to list the
>>new parameters associated with them.
>> > So if there are any parameters to be added
>>to CRS, then the entire structure
>> > will have to be added.
>> >
>> > Scott
>> >
>> > >Date: Thu, 29 Sep 2005 09:30:00 -0400
>> > >From: Fred Rose <f.g.rose@larc.nasa.gov>
>> > >X-Accept-Language: en
>> > >To: Lisa Coleman <L.H.Coleman@larc.nasa.gov>
>> > >CC: Scott Zentz <s.m.zentz@larc.nasa.gov>
>> > >Subject: [Fwd: Re: adding parameters to SYN SARB]
>> > >MIME-Version: 1.0
>> > >Content-Transfer-Encoding: 8bit
>> > >
>> > >Lisa,
>> > >"One is the canopy action PAR, and the
>>other is chlorophyll a absorbed PAR.
>> > > We are considering adding their Dir/Diff ratios too. "
> > > >
>> > >So
>> > >1)400:700nm PAR
>> > >2)400:700nm Dir/Dif
>> > >3)canopy action PAR aka PURVES
>> > >4)canopy action PAR aka PURVES Dir/Dif
>> > >5)chlorophyll_a absorbed PAR
>> > >6)chlorophyll_a absorbed PAR Dir/Dif
>> > >
>> > >

>> > >1+2) May replace the current FU(band8:10) par
>> > >So addition of 4 parameters.
>> > >
>> > >I thought Scott already did this for SYNI ??
>> > >
>> > >-------- Original Message --------
>> > >Subject: Re: adding parameters to SYN SARB
>> > >Date: Wed, 20 Jul 2005 09:55:26 -0400
>> > >From: Tom Charlock <Thomas.P.Charlock@nasa.gov>
>> > >To: l.h.coleman@larc.nasa.gov, Wenying Su <w.su@larc.nasa.gov>
> > > >CC: f.g.rose@larc.nasa.gov
>> > >References: <p06230907bf02f0192a98@[128.155.76.101]>
>> > <1050719142641.ZM14638@ninja.larc.nasa.gov>
>> >
><p0611040dbf0327805404@[192.168.1.101]><1050720094741.ZM15640@ninja.larc.nasa.g
>> > ov>
>> > >
>> > >Lisa,
>> > >
>> > >"I think adding 4 parameters is less than 1% of the total."
>> > >
>> > >That's the information that we need: We don't have to worry
>> > >about the additional parameters posing much of problem, as
>> > >regards data volume. As long as your estimate is that low,
>> > >we're home safe and do not require a precise account.
>> > >
>> > >
>> > >Thank you,
>> > >
>> > >Tom
>> > >
>> > > At 9:47 AM -0400 7/20/05, l.h.coleman@larc.nasa.gov wrote:
>> > >>Tom,
>> > >>
>> > >>I don't have the exact answer at the moment because I only
>> > >>deal with the intermediate SYNI product (binary - does not
>> > >>include the TSI input that gets merged with the SYNI data
>> > >>for the final SYN HDF product). I will work on getting that
>> > >>information today, but in the meantime I do have the attached
>> > >>spreadsheet (that is for SYNI only).
>> > >>
>> > >>I think adding 4 parameters is less than 1% of the total.
>> > >>
>> > >>Lisa
>> > >>
>> > >>

>> > >>
>> > >>On Jul 19, 5:59pm, Tom Charlock wrote:
>> > >>> Subject: Re: adding parameters to SYN SARB
>> > >>> Lisa,
>> > >>>
>> > >>> Can you estimate the % increase in the SYN SARB product, by
>> > >>> adding these parameters?
>> > >>>
>> > >>> I know that DAAC hdf users (know any besides me?)
>> > >>> have to deal with high volumes. It's the increase in volume,
>> > >>> that is of concern here.
>> > >>>
>> > >>> Tom
>> > >>>
>> > >>> At 2:26 PM -0400 7/19/05, l.h.coleman@larc.nasa.gov wrote:
>> > >>> >Wenying,
>> > >>> >
>> > >>> >Let's assume the normal 32-bits (4 bytes) per parameter
>> > >>> >per region per hour, at 360 regions per 1-deg latitudinal
>> > >>> >zone and 744 hours. That gives us 1.02 MB per parameter
>> > >>> >per zone per month. There are 180 zones, so that gives
>> > >>> >us 183.91 MB globally per month per parameter. Two
>> > >>> >parameters will add 367.82 MB, and four parameters will
>> > >>> >add 735.64 MB globally for a month.
>> > >>> >
>> > >>> >These numbers are for the binary versions of the product.
>> > >>> >The HDF versions use compression techniques that probably
>> > >>> >cut those number is half. Many here at Langley use the
>> > >>> >binary version, but users outside of Langley must
>> > >>> >use the HDF version.
>> > >>> >
>> > >>> >The binary version is also stored on the nested grid, meaning
>> > >>> >that the space used is 66% of the 735.64 MB, or 485.53 MB total
>> > >>> >for a month for the binary.
>> > >>> >
>> > >>> >Let me know if I can help with anything else.
>> > >>> >
>> > >>> >Lisa
>> > >>> >
>> > >>> >On Jul 19, 2:07pm, Wenying Su wrote:
>> > >>> >> Subject: adding parameters to SYN SARB
>> > >>> >> Lisa,
>> > >>> >>
>> > >>> >>   We are going to add two more
>>variables to the SYN PAR. One is
>> > >>> >> the canopy action PAR, and the

>>other is chlorophyll a absorbed PAR.
>> > >>> >> We are considering adding their
>>Dir/Diff ratios too. We would like to
>> > >>> >> know how much these two parameters
>>will expand you dataset before we
>> > >>> >> make the final decision.
>> > >>> >>
>> > >>> >> Thanks,
>> > >>> >>
>> > >>> >> Wenying
>> > >>> >>
>> > >>> >> CC: Tom, Fred
>> > >>> >>-- End of excerpt from Wenying Su
>> > >>> >

Email 3.

Date: Wed, 13 Jul 2005 13:30:55 -0400 (EDT)
From: "Scott M. Zentz" <szentz@saisun18.larc.nasa.gov>
Reply-To: "Scott M. Zentz" <szentz@saisun18.larc.nasa.gov>
Subject: Re: (Fwd) New Synoptic Spectral albedo
To: l.h.coleman@larc.nasa.gov

Lisa,

Done.

Scott

>From: l.h.coleman@larc.nasa.gov
>Date: Wed, 13 Jul 2005 13:25:08 -0400
>To: s.m.zentz@larc.nasa.gov, l.h.coleman@larc.nasa.gov
>Subject: (Fwd) New Synoptic Spectral albedo
>MIME-Version: 1.0
>
>
>--- Forwarded mail from David Rutan <d.a.rutan@larc.nasa.gov>
>
>Date: Wed, 13 Jul 2005 09:52:19 -0400
>From: David Rutan <d.a.rutan@larc.nasa.gov>
>To: Lisa <l.h.coleman@larc.nasa.gov>
>CC: Wenying Su <w.su@larc.nasa.gov>, FredR <f.g.rose@larc.nasa.gov>,
> TomC <Thomas.P.Charlock@nasa.gov>, Jin <jin@sunbeam.larc.nasa.gov>
>Subject: New Synoptic Spectral albedo
>
>Lisa,

>
> Attached is a copy of the data statement from the
>Syn_Spectral_Dat.f90. It includes seven updated spectral
>albedo curves along with their associated ln(nir/vis) values.
>
> (6) CLOSED SHRUBS
> (8) WOODY SAVANNA
> (9) SAVANNA
> (10) GRASSLAND
> (12) CROPLAND
> (14) CROP MOSAIC
> (18) TUNDRA
>
>Please replace when you have the opportunity.
>
> Thanks,
>
>.....Dave
>
>--
>   DATA specalbigbp /   &
> 0.032, 0.032, 0.032, 0.032, 0.032, &
> 0.032, 0.032, 0.032, 0.046, 0.046, & ! (1) EVERGREEN NEEDLE FOR
> 0.235, 0.096, 0.038, 0.038, 0.038, &
> 0.044, 0.044, 0.044, 0.044, 0.044, &
> 0.044, 0.044, 0.044, 0.044, 0.044, & ! (2) EVERGREEN BROADLEAF
> 0.234, 0.193, 0.112, 0.112, 0.112, & !   (Tropical Forest)
> 0.032, 0.032, 0.032, 0.032, 0.032, &
> 0.032, 0.032, 0.032, 0.046, 0.046, & ! (3) DECIDUOUS NEEDLE FOR
> 0.235, 0.096, 0.038, 0.038, 0.038, &
> 0.034, 0.034, 0.034, 0.034, 0.034, &
> 0.034, 0.034, 0.034, 0.066, 0.067, & ! (4) DECIDUOUS BROAD FOR
> 0.312, 0.276, 0.160, 0.160, 0.160, &
>   0.033, 0.033, 0.033, 0.033, 0.033, &
>   0.033, 0.033, 0.033, 0.056, 0.057, & ! (5) MIXED FOREST
>   0.274, 0.186, 0.099, 0.099, 0.099, &
>   0.010, 0.010, 0.010, 0.015, 0.017, &
>   0.020, 0.036, 0.045, 0.154, 0.156, & ! (6) CLOSED SHRUBS
>   0.350, 0.239, 0.101, 0.101, 0.101, &
>   0.095, 0.095, 0.095, 0.095, 0.095, &
>   0.095, 0.098, 0.104, 0.122, 0.157, & ! (7) OPEN/SHRUBS
>   0.231, 0.330, 0.311, 0.150, 0.150, &
>   0.020, 0.020, 0.020, 0.023, 0.024, &
>   0.026, 0.035, 0.041, 0.102, 0.104, & ! (8) WOODY SAVANNA (Decid
>Broadleaf*0.4+CARE Grass*0.6)
>   0.366, 0.291, 0.151, 0.107, 0.107, &

```
>        0.010, 0.010, 0.010, 0.015, 0.017, &
>        0.020, 0.036, 0.045, 0.126, 0.129, &  ! ( 9) SAVANNA (CARE grass)
>        0.402, 0.301, 0.145, 0.071, 0.071, &
>        0.010, 0.010, 0.010, 0.015, 0.017, &
>        0.020, 0.036, 0.045, 0.126, 0.129, &  ! (10) GRASSLAND (CARE grass)
>        0.402, 0.301, 0.145, 0.071, 0.071, &
>        0.039, 0.039, 0.039, 0.039, 0.039, &
>        0.039, 0.039, 0.039, 0.051, 0.071, &  ! (11) Permanent Wetlands
>        0.164, 0.100, 0.056, 0.056, 0.056, &
>        0.010, 0.010, 0.010, 0.015, 0.017, &
>        0.020, 0.036, 0.045, 0.115, 0.099, &  ! (12) CROPLAND (CARE
Composite)
>        0.442, 0.271, 0.122, 0.059, 0.059, &
>        0.052, 0.052, 0.052, 0.052, 0.052, &
>        0.052, 0.052, 0.066, 0.104, 0.114, &  ! (13) URBAN
>        0.304, 0.258, 0.258, 0.258, 0.258, &
>        0.010, 0.010, 0.010, 0.015, 0.017, &
>        0.020, 0.036, 0.045, 0.090, 0.083, &  ! (14) CROP MOSAIC
>        0.377, 0.273, 0.141, 0.110, 0.110, &
>  0.910,   0.910,   0.910,   0.916,   0.921, &
>  0.931,   0.947,   0.964,   0.953,   0.920, &!(15) Permanent Snow (Jin
1000um) !FR C
>  0.635,   0.013,   0.006,   0.009,   0.014, &
>        0.144, 0.144, 0.144, 0.144, 0.144, &
>        0.144, 0.144, 0.179, 0.263, 0.331, & ! (16) BARREN/DESERT
>        0.405, 0.390, 0.390, 0.390, 0.390, &
>        0.066, 0.066, 0.066, 0.070, 0.073, &
>        0.082, 0.094, 0.091, 0.078, 0.072, & ! (17) OCEAN WATER
>        0.066, 0.062, 0.055, 0.044, 0.069, &
>        0.010, 0.010, 0.010, 0.015, 0.017, &
>        0.020, 0.036, 0.045, 0.113, 0.115, &  ! (18) TUNDRA
>        0.247, 0.265, 0.265, 0.265, 0.265, &
>  0.979,   0.979,   0.979,   0.980,   0.982, & !FR C
>  0.984,   0.988,   0.992,   0.989,   0.982, & ! (19) FRESH SNOW(jin 50um) !FR
C
>  0.902,   0.143,   0.168,   0.019,   0.015, & !FR C
>        0.778, 0.778, 0.778, 0.778, 0.778, &
>        0.778, 0.778, 0.778, 0.778, 0.752, & ! (20) SEA ICE
>  0.393, 0.055, 0.054, 0.036, 0.036, &
>  0.910,   0.910,   0.910,   0.916,   0.921, &
>  0.931,   0.947,   0.964,   0.953,   0.920, &!(21) Large Grain  Snow (Jin
1000um)
>  0.635,   0.013,   0.006,   0.009,   0.014, &
>   0.979,   0.979,   0.979,   0.980,   0.982, &
>   0.984,   0.988,   0.992,   0.989,   0.982, &!(22) Small Grain Snow (jin
50um) !FR C
```

```
>   0.902,   0.143,   0.168,   0.019,   0.015, &
>        0.095, 0.095, 0.095, 0.095, 0.095, &
>        0.095, 0.098, 0.104, 0.122, 0.157, & ! (23) Green Desert
>        0.231, 0.330, 0.311, 0.150, 0.150, &
>       0.144, 0.144, 0.144, 0.144, 0.144, &
>       0.144, 0.144, 0.179, 0.263, 0.331, & ! (24) Barren Desert
>       0.405, 0.390, 0.390, 0.390, 0.390, &
>       0.144, 0.144, 0.144, 0.144, 0.144, &
>       0.144, 0.144, 0.179, 0.263, 0.331, & ! (25) SPARE
>       0.405, 0.390, 0.390, 0.390, 0.390/
>
>! *** ls(swNIR)/ln(swVIS)
>
>       REAL, PARAMETER :: specshape ( nigbp) =      &       !! ln ( swIR /
swVIS)
>       (/ 1.59, 1.60, 1.59, 1.69,  1.78, 1.15,  0.62, 1.55,  1.45,  1.45,    &
>          1.82, 1.69, 1.22, 1.71, -0.17, 0.50, -0.21, 1.06, -0.14, -0.67,    &
>   -0.17,-0.21,0.62, 0.50,   0.00 /)
```

Email 4.

Date: Mon, 19 Sep 2005 13:25:58 -0400 (EDT)
From: "Scott M. Zentz" <szentz@saisun18.larc.nasa.gov>
Reply-To: "Scott M. Zentz" <szentz@saisun18.larc.nasa.gov>
Subject: Weekly update
To: l.h.coleman@larc.nasa.gov

Lisa,

No update on S4P.

I have been able to compile and run both the 5.1 and 7.2 along with the smf files. No comparison has been made with 7.2 yet. 5.1 has compared very favorably with the SGI run made by Tom back in June. 1700 records were mismatched with vast majority being simply precision differences. I shall pass the results onto Fred for closer analysis of the science results. One issue with SYN on manila is I get a weird error message in runlogs:

PGS_CBP_Earth_CB_Vector Error:Message...

This shows up for every record, I dont know yet whether this effects data but it does not seem to effect the flow of execution, meaning the program still runs to completion.

I have made a new run of SYN using a newly provided TSIB file from Cathy. Fred is looking at this now.

Will start pre-processor today or tomorrow. All in all a very smooth transition.

Scott

Email 5.

Date: Mon, 1 Aug 2005 10:37:35 -0400 (EDT)
From: "Scott M. Zentz" <szentz@saisun18.larc.nasa.gov>
Reply-To: "Scott M. Zentz" <szentz@saisun18.larc.nasa.gov>
To: f.g.rose@larc.nasa.gov
Cc: t.e.caldwell@larc.nasa.gov, l.h.coleman@larc.nasa.gov

Fred,

I have completed 5 runs of SYNI with the new Fu-Liou changes. The files can be found here for zones 20, 40, 60, 80, and 90 of 200207.

/CERES/sarb-1/zentz/sarb/data/out_comp/data/sarbsyn

The new SYN structure is defined in this module NOT the one in CERESLIB.

/CERES/sarb-1/zentz/sarb/lib/src/sarb_params.f90

Let me know if there is anything else you need.

Scott

Email 6.

Date: Wed, 8 Feb 2006 11:03:07 -0500
To: Shashi Gupta <s.k.gupta@larc.nasa.gov>
From: Tom Charlock <Thomas.P.Charlock@nasa.gov>
Subject: Re: OMI column ozone
Cc: "Shashi K. Gupta" <s.k.gupta@larc.nasa.gov>,
Fred Rose <f.g.rose@larc.nasa.gov>,
Erika Geier <e.b.geier@larc.nasa.gov>,
"David P. Kratz" <david.p.kratz@nasa.gov>,
"Paul W. Stackhouse" <paul.w.stackhouse@nasa.gov>,
Thomas Caldwell <t.e.caldwell@larc.nasa.gov>,
Lisa Coleman <l.h.coleman@larc.nasa.gov>,

Wenying Su <w.su@larc.nasa.gov>, David Rutan <d.a.rutan@larc.nasa.gov>

Shashi,

Thank you for sending the information on OMI and on the reliability of our sources of ozone data. Based on your suggestions, I recommend that Tom Caldwell program CERES to continue on the track to use

1. SMOBA
2. OMI (if no SMOBA)
3. Climatology

The program structure would be similar to what he has to date (TOMS instead of OMI).

My main concern about ozone is the coming surface UV product. It will be in SYN Edition 2.

Based on this ozone dialog, it appears that total ozone should be included in the Data Product Catalog (DPC) for Edition 3 of SYN. Outside users of surface UV will get it from SYN (or more likely, from a coarse resolution on line product that we'll distribute via CAVE). If by some very small chance, our ozone source turns sour (climatology) for a brief time frame, the user of surface UV will then see it.

We have to change our Data Product Summary to indicate that the surface UV will also be in CRS for Edition 3. The user here is us; we need it for validation. We also need CRS Edition 3 with Wenying's "new" UV; and new total sky PAR and new PAR direct/diffuse ratio.

Other new products for Edition 3, that are not yet on the Data Product Summary, include CRS supplementary broadband all-sky SW flux and radiance from Seiji's LUT, and CRS supplementary pristine SW fluxes at surface and TOA from a COART-based LUT.

Tom

At 2:37 PM -0500 2/7/06, Shashi Gupta wrote:
>Hi Tom,
>
>I just had a brief chat with Fred regarding the choice of back-up
>ozone source for CERES in place of TOMS which ceased operation
>recently. Fred tells me that you are now inclined to go with a
>zonal monthly climatology based on TOMS data instead of TOMS-like

>OMI, primarily because of the inter-orbit gaps that are present in
>the OMI data. This is just to bring to your attention that similar
>gaps have always existed in TOMS data also. I believe, they have
>never attracted our attention because SMOBA supply line has been
>very steady. I do not recall any significant interruption in the
>SMOBA stream since CERES started using it. In fact, inter-orbit
>gaps in OMI data, at least the ones that Fred showed me, were
>smaller overall than were present in TOMS fields. Bottom line: OMI
>is at least as good for the job as TOMS was.
>
>All that said, I think having some kind of climatology as a final
>back-up is still a good idea. In fact, I recall that when we first
>put together the ozone hierarchy for CERES in mid 1990's, we did
>have a monthly zonal climatology (based on Eric Fleming's data from
>Goddard) as a final back-up.
>
>Shashi
>

Email 7.

Date: Wed, 05 Apr 2006 11:19:32 -0400
From: Fred Rose <f.g.rose@larc.nasa.gov>
X-Accept-Language: en
To: "Thomas E. Caldwell" <t.e.caldwell@larc.nasa.gov>, Scott Zentz
<s.m.zentz@larc.nasa.gov>
Subject: Re: Aerosols in FSW
MIME-Version: 1.0
Content-Transfer-Encoding: 7bit

Tom, Scott
Here is how I see the NEW aerosol fields in TSI
being used

1) MODIS (7wl ocean) (3wl Land) (NEW via TSI)
aerosol%optdepth047_land
aerosol%optdepth055_land
aerosol%optdepth066_land

aerosol%optdepth047_ocean
aerosol%optdepth055_ocean
aerosol%optdepth066_ocean
aerosol%optdepth087_ocean
aerosol%optdepth124_ocean
aerosol%optdepth164_ocean

aerosol%optdepth213_ocean

Just as in CRS these multiple wavelength AOT's go into
a log(wavelength) vs log(AOT) interpolation
to make sure all 7 wavelengths are filled before insertion
to the FU code. fi%n_atau =7

2) Stowe (1wl Ocean only) via TSI
--> already in use --> aero_vis_opdep063
No wavelength interpolation external to fu code is done
fi%n_atau =1

3) Init_AerOptDepth (NEW via TSI)
->>>> init_aero_optdep

The aerosol constituent heirarchy would be
1) Match daily (New via TSI)
aerosol%aero_const_ratio(1:7)
it would be implemented similar to what is aready done for the
Match Constitunet Climatology.

2) Match Constitunet Climatology
Already in use!

```
!** AEROSOL TYPE
 TYPE aerosol_data
   SEQUENCE
   REAL(real4)    ::  init_aero_optdep
   REAL(real4)    ::  aero_const_ratio(7)
   REAL(real4)    ::  optdepth047_land
   REAL(real4)    ::  optdepth055_land
   REAL(real4)    ::  optdepth066_land
   REAL(real4)    ::  optdepth047_ocean
   REAL(real4)    ::  optdepth055_ocean
   REAL(real4)    ::  optdepth066_ocean
   REAL(real4)    ::  optdepth087_ocean
   REAL(real4)    ::  optdepth124_ocean
   REAL(real4)    ::  optdepth164_ocean
   REAL(real4)    ::  optdepth213_ocean
 END TYPE aerosol_data
```

"Thomas E. Caldwell" wrote:
>
> Fred,
>
> Can you identify which parameters in this new TSI structure (which Cathy sent

> me) are the ones you want?
>
> > >The SYNI code , for the next round ,should be transitioning to
> > >a heirarchy for use of AEROSOL AOT .
> > >
> > >1) MODIS (7wl ocean) (3wl Land) (NEW via TSI)
> > >2) Stowe (1wl Ocean only) via TSI
> > >3) Init_AerOptDepth (NEW via TSI)
>
> Thanks,
> Tom
>
> ---------- Begin Forwarded Message ----------
>
> From: le.t.nguyen@larc.nasa.gov
> Date: Tue, 4 Apr 2006 16:47:54 -0400
> To: "Thomas E. Caldwell" <t.e.caldwell@larc.nasa.gov>
> Subject: Re: Aerosols in FSW
> MIME-Version: 1.0
>
> Tom,
>
> Here is the latest TSI type def with the new changes in it.
>
> Cathy
>
> On Apr 4, 4:46pm, Thomas E. Caldwell wrote:
> > Subject: Re: Aerosols in FSW
> > Cathy,
> >
> > Could you give me the names of the 3 new TSI aerosol parameters (which Fred
> > mentions below)? I'm trying to set up an interface to read them in our SYNI
> > code.
> >
> > Thanks,
> > Tom
> >
> > >Date: Tue, 04 Apr 2006 12:00:50 -0400
> > >From: Fred Rose <f.g.rose@larc.nasa.gov>
> > >X-Accept-Language: en
> > >To: cathy nguyen <Le.T.Nguyen@larc.nasa.gov>
> > >CC: Dave Doelling <d.r.doelling@larc.nasa.gov>, Rajalekshmy Raju
> > <rraju@saisgi05.larc.nasa.gov>, Scott Zentz <s.m.zentz@larc.nasa.gov>, "T.E
> > Caldwell" <T.E.CALDWELL@larc.nasa.gov>
> > >Subject: Aerosols in FSW
> > >MIME-Version: 1.0

> > >Content-Transfer-Encoding: 7bit
> > >
> > >Cathy,
> > > I looked at plots of MODIS aerosol in FSW and apparently
> > >the 018020 series for Edition2C data does NOT have MODIS aerosols
> > >While the 019021 series does.
> > >
> > >So going to another month for the next full month of TSI /SYNI seems
> > >like the only alternative.
> > >
> > >The SYNI code , for the next round ,should be transitioning to
> > >a heirarchy for use of AEROSOL AOT .
> > >
> > >1) MODIS (7wl ocean) (3wl Land) (NEW via TSI)
> > >2) Stowe (1wl Ocean only) via TSI
> > >3) Init_AerOptDepth (NEW via TSI)
> > >
> > >The aerosol constituent heirarchy would be
> > >1) Match daily (New via TSI)
> > >2) Match Climatology
> > >
> > >

Email 8.

Date: Tue, 04 Apr 2006 16:24:27 -0400
From: Fred Rose <f.g.rose@larc.nasa.gov>
X-Accept-Language: en
To: "Thomas E. Caldwell" <t.e.caldwell@larc.nasa.gov>
Subject: Re: GEOS file names
MIME-Version: 1.0
Content-Transfer-Encoding: 7bit

Tom
I don't understand why the same area integration routines
can not be applied to the 3hr skint ???

for the next run of SYNI the simple addition of 3hr skint as
currently implemented would do!
Getting Aerosols (Modis ,Match , InitAeroTau) in is a bigger priority!

I have to leave now maybe we can discuss this more tomorrow...

"Thomas E. Caldwell" wrote:
>
> Fred,

>
> How do you want me to proceed with the skin temp problem?
>
> Tom
>
> >Date: Tue, 04 Apr 2006 13:47:50 -0400
> >From: Fred Rose <f.g.rose@larc.nasa.gov>
> >X-Accept-Language: en
> >To: "Thomas E. Caldwell" <t.e.caldwell@larc.nasa.gov>
> >Subject: Re: GEOS file names
> >MIME-Version: 1.0
> >Content-Transfer-Encoding: 7bit
> >
> >Tom,
> > I think you answered the question.
> >
> >Since the 3hr and 6hr data come from the exact same
> >input file and field , it is the way they are acessed
> >and/or interpolated.
> >
> >
> >From what I can gather from " Horiz_Inter.f90"
> >The original GEOS grid data is being Averaged into
> >the CERES grid (44012) This is aparently being done
> >for the t,q,o3 profiles and 6hr skint.
> >
> >This process is however NOT being done on the 3hr Skint
> >Here the single Lat, Lon location corresponding to the
> >centroid of the Ceres Grid Box is being taken.
> >
> >
> >Tom, wiht you knowledge of the MOA code...
> >Is there a way to force the 3hrly skint to be averaged
> >in the same way as the 6hrly?
> >
> >
> >
> >"Thomas E. Caldwell" wrote:
> >>
> >> Fred,
> >>
> >> Here is a name of a GEOS file used to create MOAs for 200207:
> >>
> >> 2-d surface data
> >>
> >> DAS.cer.asm.tsyn2d_mis_x.GEOS403.2002070100.2002070121.V01

> >>
> >> The parameter MOA%SfcSkinTemp is obtained from the parameter (TSKIN) from
> this
> >> file. Both 3 and 6 hourly data come from this same parameter (TSKIN) in
the
> >> GEOS file. Every 3rd hour is stored away while the 6th hours are put on
the
> >> CERES grid and then onto the MOA record.
> >>
> >> The 3 hourly data I used in the new SYNI was obtained using Get_SKT_Data
> which
> >> reads from the native grid skin temp appended to the MOA file.
> >>
> >> You can find the re-gridding code here if you want to see it:
> >>
> >> /CERES/sarb-1/caldwell/sarb/src/regridmoa/Horiz_Inter.f90
> >>
> >> The call looks like:
> >>
> >> CALL Regrid_DRV (Index_GEOS4, GridIdx_MOA, GEOSdata_In, & ! I
> >>   Default_MOA, DPerAllow_GEOS4,   & ! I
> >>   GEOSdata_Out)   ! O
> >>
> >> Tom
> >>

Email 9.

Date: Fri, 7 Apr 2006 09:58:46 -0400 (EDT)
From: "Thomas E. Caldwell" <t.e.caldwell@larc.nasa.gov>
Reply-To: "Thomas E. Caldwell" <t.e.caldwell@larc.nasa.gov>
Subject: Re: Aerosols in FSW
To: l.h.coleman@larc.nasa.gov

Lisa,

We have a slight problem with using the aerosol rule hiearchy in SYNI.

Cathy has said that some parameters were removed from TSI. They are:

TSI % timeandloc % julday
TSI % clrsky_area_data % snow_ice_cov

Both are used to calculate parameters in SynSARB_Ingest. Suggestions?

Tom

---------- Begin Forwarded Message ----------

From: le.t.nguyen@larc.nasa.gov
Date: Fri, 7 Apr 2006 09:49:59 -0400
To: "Thomas E. Caldwell" <t.e.caldwell@larc.nasa.gov>
Subject: Re: Aerosols in FSW
MIME-Version: 1.0

Tom,

Dave D wanted some parameters out of TSI and add some in.

snow_ice_cov is one of them which was removed.

Here is the new tsi_type_def.

Cathy

Email 10.

Date: Thu, 15 Jun 2006 10:12:39 -0400
From: Fred Rose <f.g.rose@larc.nasa.gov>
X-Accept-Language: en
To: "Thomas E. Caldwell" <t.e.caldwell@larc.nasa.gov>
CC: Scott Zentz <s.m.zentz@larc.nasa.gov>, Dave Doelling <d.r.doelling@larc.nasa.gov>, cathy nguyen <Le.T.Nguyen@larc.nasa.gov>, Tom Charlock <Thomas.P.Charlock@nasa.gov>
Subject: SYNI Runs
MIME-Version: 1.0

Tom,

This looks better, our 180deg shift in our new sg% SYNI sfcalbedo appears to be gone!

The SW mean and RMS error look comparable to earlier runs using the CRS fov style surface properties, but one zone Z026 at latitude 64N dosen't cover all the bases. It's only Ceres and interpolated at this latitude, no Geo.
On the brightside with 133659/133920 of LW observed and untuned reported were at 99.8% output percentage for this lat zone.
What was the run time ???

Can we start a SYNI run of at least Z090, then Z060, Z030, Z005 ..

But don’t delete Z026 I want to keep looking at it for a while.

Then we can compare to earlier analysis for these zones and
then hopefully launch a full month of zones soon!

Be ready for setbacks, I don’t think we’re out the woods yet.

"Thomas E. Caldwell" wrote:
>
> Fred,
>
> I ran this file using your correction to synx routine:
>
> /CERES/sarb-b/caldwell/SYNOutput_June52006/
> CER_SYNI_Terra-FM1-MODIS_SSIT_999999.200207Z026
>
> Tom
>
> >Date: Wed, 14 Jun 2006 13:36:36 -0400
> >From: Fred Rose <f.g.rose@larc.nasa.gov>
> >X-Accept-Language: en
> >To: "Thomas E. Caldwell" <t.e.caldwell@larc.nasa.gov>
> >Subject: Re: pressure level correction
> >MIME-Version: 1.0
> >
> >Tom,Scott
> >I think this ~10 line correction to be placed
> > near the bottom of subroutine synx will
> >correct the problem for the most part. I HOPE!!!
> >
> >There is still the issue when the ibeg is west of 0lon and iend is east of
0lon
> >where ibeg would be less than iend , I kludged a fix by assinging
> >iend to 360 when ibeg > iend ....
> >
> >
> >"Thomas E. Caldwell" wrote:
> >>
> >> Fred,
> >>
> >> I ran zone 25 using some code which will hopefully correct the pressure
level
> >> problem you mentioned before. You can find the file here:
> >>

> >> /CERES/sarb-b/caldwell/SYNOutput_June52006/
> >> CER_SYNI_Terra-FM1-MODIS_SSIT_999999.200207Z025
> >>
> >> Tom
> >>
> >>

[Attachment (APPLICATION/pdf): "syn.20060612.pdf" 217185 bytes
  syn.20060612.pdf
  Encoded with "base64"]

Email 11.

Date: Tue, 08 Aug 2006 12:57:34 -0400
From: Fred Rose <f.g.rose@larc.nasa.gov>
X-Accept-Language: en
To: cathy nguyen <Le.T.Nguyen@larc.nasa.gov>
CC: Dave Doelling <d.r.doelling@larc.nasa.gov>, "T.E Caldwell"
<T.E.CALDWELL@larc.nasa.gov>, Tom Charlock <Thomas.P.Charlock@nasa.gov>
Subject: Prebeta SYNI File
MIME-Version: 1.0
Content-Transfer-Encoding: 7bit

Cathy,Dave

Tom Caldwell ran a full month of SYNI in test mode on warlock
over the weekend and we are in the process of FTPing the files back
to SCF. Anticipate this should complete some time late today (tuesday)
or no later than tomorrow morning. The files are being placed on:

/CERES/sarb-a/SYNoutput/Aug72006

as of 1245pm we have all but Z085-Z099 (14 zones) on this path.

The averaging code I use to diagnose the output is still running , but
from what I've seen so far I'm fairly confident this will be the last
PREBETA run. It looks pretty good now! I hope to have a my suite
of monthly average map plots by sometime tomorrow also!
--
Fred G. Rose (757)827-4649
http://srbsun.larc.nasa.gov/~rose/
f.g.rose@larc.nasa.gov

Email 12.

Date: Thu, 10 Aug 2006 15:39:26 -0400
To: Tom Charlock <Thomas.P.Charlock@nasa.gov>
From: "Bruce A. Wielicki" <b.a.wielicki@nasa.gov>
Subject: Re: Believe SYNI ready to proceed to Beta Delivery stage.
Cc: Fred Rose <f.g.rose@larc.nasa.gov>, Dave Doelling
<d.r.doelling@larc.nasa.gov>, Erika Geier <Erika.B.Geier@nasa.gov>, Lisa Coleman
<L.H.Coleman@larc.nasa.gov>, "T.E Caldwell" <T.E.CALDWELL@larc.nasa.gov>, cathy
nguyen <Le.T.Nguyen@larc.nasa.gov>, Wenying Su <w.su@larc.nasa.gov>, Dave Rutan
<D.A.rutan@larc.nasa.gov>, Zhonghai Jin <z.jin@larc.nasa.gov>, Scott Zentz
<s.m.zentz@larc.nasa.gov>, seiji kato <S.KATO@larc.nasa.gov>
MIME-Version: 1.0
Content-Transfer-Encoding: 8bit
X-MIME-Autoconverted: from quoted-printable to 8bit by elysium.larc.nasa.gov id
k7AJmWgh011057

Tom et al:

sounds like we are ready to go ahead. thanks to
all for the solid progress on these key
subsystems!

cheers
bruce

At 2:44 PM -0400 8/10/06, Tom Charlock wrote:
>Fred,
>
>After reviewing the material on your URL, and exchanging further email
>and plots (between you, Seiji, and me, and then between Dave Doelling,
>you, and me), I agree that things look ready from the science end,
>to proceed with delivery of SYNI BETA release.
>
>Whomever must decide "proceed, yes or no" can be assured that you
>are checking further fields (fluxes as multiple levels, surface UV
>and PAR, etc.) not yet on the URL, and this will take a few days.
>
>Tom
>
>
>At 12:22 PM -0400 8/9/06, Fred Rose wrote:
>>To all parties interested in SARB SYNI,
>>
>>After much struggle with bugs, disk failures and system shutdowns
>>It is my opinion that we are ready to proceede

>>to delivery of SYNI BETA release.
>>
>>What I hope is the last (for a while) of full global SYNI runs
>>at the SCF for July 2002 finshed earlier this week.
>>
>>Some analysis consisting mostly of monthly averages
>>and standard deviations of key toa and surface parmeters are located on:
>>
>>http://snowdog.larc.nasa.gov/rose/syni/
>>
>>This last GOOD run are named "prebeta14" on the plot page
>>These plots are NOT from the formal AVG subsystem.
>>They were made using an my own code working on
>>a subset of SYNI and TSI parameters.
>>
>>Also attached are scatterplots and histograms
>>of monthly average and temporal standard deviations of
>>Untuned and Tuned Vs Observed for TOA SW and TOA LW.
>>
>>There is a minor problem of missing a few grid boxes near the terminator
>>for the month from the observed total_sw being missing. Don't think this
>>should be a showstopper. On a global average
>>basis less than 1 hour out of the possible
>>744 hours in a month are not computed by SYNI.
>>
>>Of course I have not looked at all parmeters
>>but the key ones look good in my opinion.
>>
>>If there is an analysis on a certain group of parmeters that you think we
>> "need to have" before delivery please contact me.
>>
>>
>>--
>>Fred G. Rose (757)827-4649
>>f.g.rose@larc.nasa.gov
>>
>>
>>Attachment converted: Macintosh
>>HD:syni_mthavg_toaerr_stats.pdf (PDF /«IC»)
>>(0033EA04)
>
>
>--
>---
>Dr. Thomas P. Charlock ("Tom")
>Mail Stop 420   (for express mail add "21 Langley Boulevard, Room 170")

>NASA Langley Research Center
>Hampton, Virginia 23681-2199
>USA
>
>Fax: 1-757-864-7996   Phone: 1-757-864-5687
>Email: Thomas.P.Charlock@nasa.gov
>
--
Bruce A. Wielicki
Mail Stop 420
NASA Langley Research Center
Hampton, VA 23681-2199

Phone: (757) 864-5683
FAX: (757) 864-7996

Email 13.

Date: Wed, 15 Mar 2006 16:05:09 -0500
From: Fred Rose <f.g.rose@larc.nasa.gov>
To: l.h.coleman@larc.nasa.gov, Tom Charlock <Thomas.P.Charlock@nasa.gov>,
      Dave Doelling <d.r.doelling@larc.nasa.gov>,
      Scott Zentz <s.m.zentz@larc.nasa.gov>
Subject: Re: SYN and # of levels

Lisa,
Ok , I guess , at 35 vertical levels makes for big files..
Also does TISA know how to average this for AVG ...

Are there always the same # of valid levels in all grid boxes at all times ?
Like 5 for CRS.. (TOA,70,200,500Sfc)

How does one determine the surface level ?
Is the surface level always at some level #
It doesn't look that way from what I've seen!

If TISA doesn't know about this then we will likely NOT
have valid monthly average surface fluxes.

time:1,2,3...744

1 v v v v v v
2 v v v v v v
3 v v v v v v
..

33 v v v v v v
34 v v v v v v
35 v d d v v d
36 d d d v d d

V= valid flux value
D= default (missing)

If you average level 36 it may only have a single valid computation
and would not be representative of a Monthly average Surface

Instead TISA may need to take the lowest level # with valid data
and average it to get surface fluxes!?

l.h.coleman@larc.nasa.gov wrote:
>
> Fred,
>
> I don't know about the loop business, but we do write out all of the levels,
> at least to the binary (can't remember if they all go on the HDF version).
> We have been doing this pretty much since a June 2003 delivery, as per a
> request from Tom.
>
> Lisa
>
> On Mar 15, 1:26pm, Fred Rose wrote:
> > Subject: SYN and # of levels
> > Scott, Lisa
> > I found that we are writing out the FULL 36 LEVEL profile
> > for the current SYNI Run...
> >
> > IF so I was out of the loop on this??
> >
> > IS THIS WHAT IS INTENDED ???
> >
> > !---
> >
> > INTEGER, PARAMETER :: PrsLev = 2
> > INTEGER, PARAMETER :: MaxLev_SYN = 36
> >
> >
> >
> > TYPE Profile_TYPE_Full
> >   SEQUENCE
> >   INTEGER (int4) :: NumLev   ! Number of levels in profile

> >   REAL (real4) :: Pres_Lev (MaxLev_SYN)   ! Pressure (hPa) of levels
> >   ! in profile
> >   REAL (real4) :: UpSW_PrsSky (PrsLev)   ! Tuned SW flux, upward, pris sky
> >   REAL (real4) :: DnSW_PrsSky (PrsLev)   ! Tuned SW flux, downward, pris sky
> >   REAL (real4) :: UpLW_PrsSky (PrsLev)   ! Tuned LW flux, upward, pris sky
> >   REAL (real4) :: DnLW_PrsSky (PrsLev)   ! Tuned LW flux, downward, pris sky
> >   REAL (real4) :: UpWN_PrsSky (PrsLev)   ! Tuned WN flux, upward, pris sky
> >   REAL (real4) :: DnWN_PrsSky (PrsLev)   ! Tuned WN flux, downward, pris sky
> >   REAL (real4) :: UpSW_ClrSky (MaxLev_SYN) ! Tuned SW flux, upward, clr sky
> >   REAL (real4) :: DnSW_ClrSky (MaxLev_SYN) ! Tuned SW flux, downward, clr sky
> >   REAL (real4) :: UpLW_ClrSky (MaxLev_SYN) ! Tuned LW flux, upward, clr sky
> >   REAL (real4) :: DnLW_ClrSky (MaxLev_SYN) ! Tuned LW flux, downward, clr sky
> >   REAL (real4) :: UpWN_ClrSky (MaxLev_SYN) ! Tuned WN flux, upward, clr sky
> >   REAL (real4) :: DnWN_ClrSky (MaxLev_SYN) ! Tuned WN flux, downward, clr sky
> >   REAL (real4) :: UpSW_TotSky (MaxLev_SYN) ! Tuned SW flux, upward, tot sky
> >   REAL (real4) :: DnSW_TotSky (MaxLev_SYN) ! Tuned SW flux, downward, tot sky
> >   REAL (real4) :: UpLW_TotSky (MaxLev_SYN) ! Tuned LW flux, upward, tot sky
> >   REAL (real4) :: DnLW_TotSky (MaxLev_SYN) ! Tuned LW flux, downward, tot sky
> >   REAL (real4) :: UpWN_TotSky (MaxLev_SYN) ! Tuned WN flux, upward, tot sky
> >   REAL (real4) :: DnWN_TotSky (
> > TYPE (Profile_TYPE_Full) :: Profile
> >
> > --
> > Fred G. Rose (757)827-4649
> > http://srbsun.larc.nasa.gov/~rose/
> > f.g.rose@larc.nasa.gov
> >-- End of excerpt from Fred Rose
>
> --

Email 14.

Date: Fri, 25 Aug 2006 08:57:30 -0400
From: Fred Rose <f.g.rose@larc.nasa.gov>
To: l.h.coleman@larc.nasa.gov
Subject: Re: Final Check before Release of Synoptic SARB Subsystem software to
ASDC

l.h.coleman@larc.nasa.gov wrote:
>
> Fred,
>
> As the Synoptic SARB Subsystem is now making it's way toward the final testing
> steps before being released to the ASDC for operational testing, I would like a
> last check that we did what we were supposed to do. Here is the list from our
> requirements log. Is the list complete? Did we successfully complete the items

> on the list?
>
> Thanks,
> Lisa
>
> 7.2-1.0 Prepare Synoptic SARB for Terra Beta3/TRMM Beta4 delivery
Yes, But there was no focus on handling TRMM

> 7.2-1.1 Replace data statement from Syn_Spectral_Dat.f90 to include 7
> updated spectral albedo curves with associated ln (nir/vis) values
? I hope so, I looked at
/CERES/sarb-1/caldwell/sarb/src/sarbsyn/mainss7_2/Syn_Spectral_Dat.f90
 but did not see any comments regarding this.
Am I looking at the correct version of the code??

Also the diurnal "d" values are apparently still different for the common scene types (1-20)
between /CERES/sarb-1/caldwell/sarb/lib/src/sfcalb_history.f90
/CERES/sarb-1/caldwell/sarb/src/sarbsyn/mainss7_2/Syn_Spectral_Dat.f90

The 'd' values should be the same as those used in the creation of the surface albedo history maps OR ideally the SAH would need to be reprocessed with updated "d" values.

> 7.2-1.2 Add new parameters to SYNI product
Yes.

> 7.2-1.3 Make any necessary modifications to Synoptic SARB Subsystem to
> enable OpenSource environment processing
Huh???

> 7.2-1.4 Add new parameters to the SYNI for Total ozone amount and source
> of ozone data.
 I didn't see these in the prebeta runs we made in early August.
Personally I don't remember this but thats not suprising.
Wenying probably wanted this for UV analysis,
Also, don't forget to make UN INDEXES Real instead of Integer.

> 7.2-1.5 Implement use of aerosol hierarchy in similar manner as CRS.
> Use new aerosol parameters from TSI.
We have this but we take it directly from the match filese rather than FSW/TSI as we had badly staged FSW in some cases with no match aerosol

> 7.2-1.6 Modify code to use 3-hourly MOA skin temperature values
> instead of 6-hourly values.
Yes!

> 7.2-1.7 Implement corrections and updates to code as directed by
> subsystem science testing.
Yes, we had fun for about two months finding about 10-15 seperate bugs, We even kept a list that Tom Caldwell has.

> 7.2-1.8 Modify aerosol decode routine in sarb_params module to
> handle default input values.
Think so , believe Scott did this.

> 7.2-1.9 Change number of SYNI vertical flux profile levels from 36 to 5.
Yes!

Email 15.

Date: Fri, 1 Sep 2006 13:26:00 -0400 (EDT)
From: "Thomas E. Caldwell" <caldwell@elysium.larc.nasa.gov>
Reply-To: "Thomas E. Caldwell" <caldwell@elysium.larc.nasa.gov>
Subject: Re: New SYNI files
To: l.h.coleman@larc.nasa.gov

Lisa,

Here is the email from Fred which validates the new ozone parameters on the SYNI.

Tom

---------- Begin Forwarded Message ----------

Date: Thu, 31 Aug 2006 14:52:34 -0400
From: Fred Rose <f.g.rose@larc.nasa.gov>
X-Accept-Language: en
MIME-Version: 1.0
To: "Thomas E. Caldwell" <caldwell@elysium.larc.nasa.gov>
Subject: Re: New SYNI files
Content-Transfer-Encoding: 7bit

Tom,
I see some problem!

I have SYNI_Loc%RegNum always as 0 which caused my code to stop.

I removed the if check on that variable and saw what looked like
good values in SYN_SARB%TuneParam%Init_ColOzone_SYN

"Thomas E. Caldwell" wrote:
>
> Fred,
>
> I have made some SYNI files with the ozone parameters added, but Cathy is
having
> trouble reading them. Can you take a look at them? They are here:
>
> /CERES/sarb-a/SYNoutput/Cathy
>
> I am including an updated sarb_params for reference.
>
> Tom
>
> ---------- Begin Forwarded Message ----------
>
> From: le.t.nguyen@larc.nasa.gov
> Date: Thu, 31 Aug 2006 13:28:09 -0400
> To: "Thomas E. Caldwell" <caldwell@elysium.larc.nasa.gov>
> Subject: Re: New SYNI files
> MIME-Version: 1.0
>
> Tom,
>
> Can you read the first region # of zone 45 in that directory for me?
> For some reason, I got 0
>
> Thanks,
> Cathy
>
> On Aug 30, 1:46pm, Thomas E. Caldwell wrote:
> > Subject: New SYNI files
> >
> > Cathy,
> >
> > I have run some SYNI files with two new parameters added for ozone requested
> by
> > Wenying Su. You can find the files on thunder here:
> >
> > /CERES/sarb-a/SYNoutput/Cathy
> >
> > I am also attaching the modified sarb_params.f90 to show the modified
> structure.
> >
> > Please let me know as soon as you can verify that these files can be

processed
> > without problems.
> >
> > Tom
> >
> > ----------
---------- Name: sarb_params.f90
> sarb_params.f90 Type: Plain Text (TEXT/plain)
> Description: sarb_params.f90

Email 16.

Date: Tue, 5 Sep 2006 11:01:43 -0400 (EDT)
From: "Thomas E. Caldwell" <caldwell@elysium.larc.nasa.gov>
Reply-To: "Thomas E. Caldwell" <caldwell@elysium.larc.nasa.gov>
Subject: Re: Final Check before Release of Synoptic SARB Subsystem software to ASDC
To: l.h.coleman@larc.nasa.gov

Lisa,

I have verified this, however, I need to generate expected output once more because even though the code is correct, an oversight caused my files to have region numbers of zero. I could send what I have for expected output, but I'm not interested in seeing what zero region numbers could do during testing.

Tom

>From: l.h.coleman@larc.nasa.gov
>Date: Tue, 5 Sep 2006 10:55:09 -0400
>To: "Thomas E. Caldwell" <caldwell@elysium.larc.nasa.gov>
>Subject: Re: Final Check before Release of Synoptic SARB Subsystem software to ASDC
>MIME-Version: 1.0
>
>Tom,
>
>Have you verified this?
>
>Lisa
>
>
>
>On Sep 5, 9:44am, Fred Rose wrote:
>> Subject: Re: Final Check before Release of Synoptic SARB Subsystem softwar
>> Tom,

>> You should have recieved this email from Dave Rutan
>> saying that If you have corrected the D values to match what
>> is in the Surface Albedo History creation. AND. The spectral albedo
>> shapes were the same as what was in the file he pointed to, the code should
>> be OK for delivery.
>>
>>
>> Subject:
>> Re: [Fwd: [Fwd: New spectral albedos]]
>> Date:
>> Mon, 28 Aug 2006 10:09:49 -0400
>> From:
>> David Rutan <d.a.rutan@larc.nasa.gov>
>> To:
>> "T.E Caldwell" <T.E.CALDWELL@larc.nasa.gov>
>> CC:
>> Fred Rose <f.g.rose@larc.nasa.gov>, Lisa Coleman
><L.H.Coleman@larc.nasa.gov>
>> References:
>> 1
>>
>> Tom,
>>
>> I looked in this directory:
>>
>> /CERES/sarb-1/caldwell/sarb/src/sarbsyn/mainss7_2
>>
>> and see that the module Syn_Spectral_Dat.f90
>>
>> has the most recent spectral albedo shapes and the most
>> recent d-values. However, as Fred points out in his
>> e-mail the d-values must match those used to create
>> the Edition 2-B albedo history maps and should be changed
>> as he specifies below.
>>
>> Another question I have is that Fred led me to this
>> directory to check the values. Is there any way to know
>> which directory contains which set of code that is
>> about to be delivered, or which is currently in question?
>>
>> Thanks,
>>
>> .....Dave
>>
>> "Thomas E. Caldwell" wrote:
>> >

>> > SARB folks,
>> >
>> > Based on emails from Fred and others, I think all the requirements for this
>> > delivery except for:
>> >
>> > 7.2-1.1 Replace data statement from Syn_Spectral_Dat.f90 to include 7
>> >   updated spectral albedo curves with associated ln (nir/vis) values
>> >
>> > have been met. I need Dave or Fred to send me a final OK on the code for
this
>> > last requirement before I can finish things up. I hope to deliver code
next
>> > Friday (this Friday was out due to weather problems).
>> >
>> > Tom
>> >

Email 17.

Date: Fri, 7 Oct 2005 09:39:03 -0400 (EDT)
From: "Scott M. Zentz" <szentz@saisun18.larc.nasa.gov>
Reply-To: "Scott M. Zentz" <szentz@saisun18.larc.nasa.gov>
Subject: SYN on Manilla
To: l.h.coleman@larc.nasa.gov

Lisa,

I was able to lower the mismatches for the comparison of manila and scf SYN runs from at one point every single record, about 268k, down to 125. The main culprit was a line of code in uvcorr_all.f90 that used an uninititalized variable in an arithmatic operation. A few other changes in the same module were made that properly initialized real variables with real numbers, and also eliminated the use of interger values in real arithmatic. The remaining differences are similar to what we are seeing in 5.1, and also about the same ratio of mismatches to footprints/FOVS.

Will now run 5.1 over with these recent changes to see if any effect is noticed.

Scott

Email 18.

Date: Tue, 05 Sep 2006 14:57:53 -0400
From: David Rutan <d.a.rutan@larc.nasa.gov>
To: "Thomas E. Caldwell" <caldwell@elysium.larc.nasa.gov>

CC: l.h.coleman@larc.nasa.gov, rose@srbsun.larc.nasa.gov
Subject: Re: Final Check before Release of Synoptic SARB Subsystem software to
ASDC

Tom,

I looked at d-values in Syn_Spectral_Dat.f90
(from /CERES/sarb-a/SYNoutput/SCCR634/sarb/src/sarbsyn/mainss7_2)

and checked it against d-values in the file Spectral_Dat.f90
(from /CERES/sarb/lib/src)

The d-values are the same.

I assume Spectral_Dat.f90 is the code used to create the albedo
history tables. So all is well.

.....Dave

>
> SARB folks,
>
> Based on emails from Fred and others, I think all the requirements for this
> delivery except for:
>
> 7.2-1.1 Replace data statement from Syn_Spectral_Dat.f90 to include 7
> updated spectral albedo curves with associated ln (nir/vis) values
>
> have been met. I need Dave or Fred to send me a final OK on the code for this
> last requirement before I can finish things up. I hope to deliver code next
> Friday (this Friday was out due to weather problems).
>
> Tom
>

Email 19.

From: j.h.saunders@larc.nasa.gov
Date: Wed, 6 Sep 2006 13:48:39 -0400
To: cerescm@larc.nasa.gov, e.b.geier@larc.nasa.gov, l.h.coleman@larc.nasa.gov,
t.e.caldwell@larc.nasa.gov
Subject: Synoptic SARB R4V1 Operator's Manual - SCCR 634

The CERES Synoptic Surface and Atmospheric Radiation Budget
(SARB) Subsystem (Subsystem 7.2) Operator's Manual, R4V1 -
SCCR 634, has been posted on the CERES Operator's Manual Web page

(http://asd-www.larc.nasa.gov/ceres/ops_man/).

This includes the pdf and tar files.

Joanne