Department of Information Science,
Graduate School of Science and Engineering, Saga University
Master's Thesis

Cross calibration and error analysis for visible and near infrared radiometer carried on the earth observation satellite in consideration of characteristics of spectral responsibility

Author 11573010 Yuichi Sarusawa
Supervisor Professor Kohei Arai

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Abstract

Because the degradation can occurs on the sensor carried on the earth observation satellite, it should be monitored. Cross calibration is developed for monitoring. Cross calibration between sensors carried on the earth observation satellite is implemented and its result is reported. In prior research of cross calibration, characteristic of spectral responsibility of sensor is not considered. For implementing cross calibration accurately, it should be considered.

For consideration of spectral responsibility on cross calibration, we proposed the method that it estimates and reduce the biases existed on between sensors due to differenced of spectral response function of sensor. We applied the method to cross calibration between ASTER and other sensors (MISR, MODIS, ETM+) with error analysis.

As a result, we got several result: the biases in green and red band are less than $3.00(\mathrm{W\ m^{-2}\ sr^{-1}\ \mu m^{-1}})$ except for MISR; the biases in NIR band are bigger than other bands ($> 6.00(\mathrm{W\ m^{-2}\ sr^{-1}\ \mu m^{-1}})$). Therefore, as a result in consideration of spectral responsibility of sensor, the biases in NIR can affect cross calibration by increasing degradation coefficient. Proposed method was shown that the method is valid to implement cross calibration for consideration of spectral responsibility of sensor.

Acknowledgements

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Contents

List of Figures

List of Tables

Chapter 1

Introduction

1.1 Motivation

In sensor carried on the earth observation satellite, degradation caused by some factors can occur to degrease an accuracy of data. The system which can monitor the degradation of sensor repeatedly is carried on the sensor in order to keep the accuracy, it is called Onboard calibrator. Onboard calibration is implemented by using onboard calibrators. Dinguirard and Slater (1999) argued, "Onboard calibrators are used to obtain frequent checks of sensor calibration in flight. They use artificial (generally lamp) sources or natural sources (the Sun)" (p. 197). On the other hand, other calibration method should be implemented instead of onboard calibration because the calibrator was degraded.

Cross calibration is the one of calibration method. Cross calibration method which apply to sensors on the satellite was developed. Arai and Terayama (2000) argued, "This method checks coincidence between observed data of sensor and evaluates validity of radiometric calibration by comparison of several observed data. The spectral response function of sensors are overlapped, observed data adjusts Instantaneous Field of View and relative geometries [The sentence was translated from Japanese]" (p. 60). Key parameters of cross calibration, such as spatial resolutions, registration error, and spectral response function (SRF), cause difference that observed data are not same even if the sensors observe same site simultaneously. The difference becomes error on cross calibration, so that the error should be estimated as error analysis.

1.2 Objective

Several researchers investigated cross calibration. Teillet, Fedosejevs, Thome, and Barker (2007) investigated impact of spectral response difference effect between sensors as quantitative indication using simulated data of observation. The effect is called SBDE (Spectral Band Difference Effect) in this research. Twenty sensors were con-

sidered in the simulation together with some ground types, various combinations of atmospheric states and illumination geometries. They argued, "Overall, if spectral band difference effects (SBDEs) are not taken into account, the Railroad Valley Playa site is a 'good' ground target for cross calibration between most but not all asatellite sensors in most but not all spectral regions investigated. 'Good' is defined as SBDEs within ±3%." (p. 1).

Liu, Li, Qiao, Liu, and Zhang (2004) developed a new method for cross calibration, and then applied the method to sensors Multi-channel Visible Infrared Scanning radiometers (MVIRS) and Moderate Resolution Imaging Spectroradiometer (MODIS). They argued," 'An error analysis indicates that the calibration is accurate to within 5%, which is comparable to, or better than, the vicarious calibration method. " (p. 5279). The method consider surface bidirectional reflectance distribution function (BRDF) mainly. BRDF indicates distribution of angle of reflection depend on an angle of incidence of illumination on the surface.

In these researches, difference of SRF do not be considered. If the impact of its difference can consider on cross calibration, differences between observed data can explain more exactly and we can implement cross calibration by higher reliability. Therefore, our research question is what kind of influence does the difference between SRFs have on cross calibration and error analysis. In order to answer this question, we propose a method that biases caused by difference between SRFs is estimated and then it is removed on cross calibration.

1.3 Contribution

By answering in research question, firstly, errors on cross calibration can be explained more exactly because the impact of difference between SRFs on cross calibration is removed. As a result, we can understand phenomenons on the earth because the phenomenons can be observed by plural sensor and then we can obtain data in more details.

1.4 Outline

Chaper 2 are described theoretical background of this study (e.g. Radiative Transfer, Sensor observed/obtained radiance). Chapter 3 are described about implemented experiment containing used materials and procedures, and then,shows the result of experiment and discussions it. Chapter 4 shows conclusion this study.

Chapter 2

Radiative Transfer

2.1 Theoretical background of the sensor

2.1.1 Instrument model for sensor

The sensor which is carried on the earth observation satellite observes radiance $L(\lambda)$ (W m^{-2} sr^{-1} μm^{-1}, W : Watt) (we call *observed* radiance) due to extinction by solar irradiance, atmosphere, and to reflection by ground surface. We can obtain radiance from the sensor (we call *obtained* radiance) in each spectral band. The term *band* indicates range of wavelength $\lambda(\mu\text{m})$ that the sensor can observe due to each SRF. Dinguirard and Slater (1999) argued a model of sensor:

> The first problem to be solved, when speaking of calibration or inter-calibration, is the definition of a universal way to model the physical entities involved (Leroy, 1988). Satellite optical sensors are instruments which measure the radiance due to the reflection and scattering of input solar irradiance from the ground and atmosphere. As they have given spectral bands we generally refer to the 'effective' or 'equivalent' radiance which is the weighted average of $L(\lambda)$ across the given spectral band of spectral sensitivity $s(\lambda)$:
>
> $$L = \frac{\int_0^\infty L(\lambda)s(\lambda)d\lambda}{\int_0^\infty s(\lambda)d\lambda} \quad (\text{W m}^{-2}\,\text{sr}^{-1}\,\mu\text{m}^{-1}). \qquad \text{(p. 196)}$$

We requote it from Leroy(1988)[1]. We re-express *obtained* radiance L as follow:

$$L_X(b) = \frac{\int_0^\infty L(\lambda)s_X(b,\lambda)d\lambda}{\int_0^\infty s_X(b,\lambda)d\lambda} \quad (\text{W m}^{-2}\,\text{sr}^{-1}\,\mu\text{m}^{-1}), \tag{2.1}$$

[1]Leory, M. (1988), Modèle des systèmes de mesure imageus optiques. In *Remote Sensing from Space: Physical Aspects and Modelling*, Toulouse, August, CNES Summer School in Space Physics, Cepadues, pp. 311-363.

where b is spectral band number, X is sensor name, $L_X(b)$ is obtained radiance on band b of sensor X, $s_X(b, \lambda)$ is SRF on band b of sensor X.

2.1.2 Instantaneous Field of View

Instantaneous Field of View indicates an angle of viewing, the detector on sensor can sense radiation in the angle. The angle is related to spatial resolution of observed data that it means pixel size on observed data as ground based width. The resolution shows the size of smallest possible feature on ground.

2.1.3 Degradation coefficient

Degradation coefficient means a quantity that the sensor is degraded. Tsuchida, Sakuma, and Iwasaki (2004) described the coefficient as "$K(b) = Rad(b, 1.00)/Rad_{\text{actual}}(b)$" (eq. 7), where b is band, $K(b)$ is degradation coefficient, $Rad(b, 1.00)$ is observed data by sensor before correcting the degradation, $Rad_{\text{actual}}(b)$ is actual radiance, respectively. We re-express the degradation coefficient by replacing: $K(b) \rightarrow RCC(b)$, $Rad(b, 1.00) \rightarrow L_0(b)$, $Rad_{\text{actual}}(b) \rightarrow L_{\text{actual}}(b)$. As the result, degradation coefficient can be shown as,

$$L_0(b) = L_{\text{actual}}(b) * RCC(b, days), \tag{2.2}$$

$$\rightarrow RCC(b, days) = L_0(b)/L_{\text{actual}}(b) \tag{2.3}$$

In actually, we use data corrected by onboard calibration system. We can modify $RCC(b, days)$ as $RCC_{\text{obc}}(b, days)$, the system can obtain $RCC_{\text{obc}}(b, days)$ by showing the light of source $L_{\text{actual}}(b)$ to the sensor regularly. Hence, in correcting by onboard calibration system, we re-express a equation 2.3 as:

$$RCC_{\text{obc}}(b, days) = L_0(b)/L_{\text{actual}}(b). \tag{2.4}$$

2.1.4 Cross calibration

Onboard calibration system corrects the degradation of sensor by showing the light $L_{\text{actual}}(b)$. However, $L_{\text{actual}}(b)$ is degraded so that its vicarious source is needed. In cross calibration by using well-corrected sensor Y, $L_{\text{Y}}(b')$, obtained from sensor Y, can be vicarious of $L_{\text{actual}}(b)$. Hence, degradation coefficient by cross calibration can be obtained as $RCC_{\text{Y}}(b', days)$, where b' is band on sensor Y. A necessary and sufficient condition for cross calibration is to overlap bandwidth of these bands b and b'.

When we estimates the degradation coefficient on sensor X by comparing with

sensor Y, we define the degradation coefficient on cross calibration $RCC_{\mathrm{Y}}(b)$ as below:

$$RCC_{\mathrm{Y}}(b) = L_0(b)/L_{\mathrm{Y}}(b'), \tag{2.5}$$

where $L_0(b)$ is not corrected data on sensor X obtained by mutiplying $RCC_{\mathrm{obc}}(b, days)$ to observed data $L_{\mathrm{X}}(b)$, $L_{\mathrm{Y}}(b')$ is well-corrected band b' data on sensor Y, and band width between b and b' are overlapped, respectively. The equation (2.5) can be obtained from a equation (2.4) by replacing $L_{\mathrm{actual}}(b)$ to $L_{\mathrm{Y}}(b')$.

Even if we get obtained radiance from sensors X and Y as $L_{\mathrm{X}}(b)$ and $L_{\mathrm{Y}}(b')$ on same site simultaneously, these data are not equal because of key parameters of cross calibration. In ASTER User's Guide (Earth Remote Sensing Data Analysis Center, 2005), the causes are described as below:

> In this cross-calibration, the following items should be taken into account,
>
> 1. Different atmospheric influences due to differences in the spectral coverage of the bands of each the instrument,
> 2. Different spectral reflectance and or spectral emissivity due to difference in the spectral coverage of the bands of each instrument,
> 3. Mis-registration between instrument data,
> 4. Different IFOV. (p. 70)

If $L_{\mathrm{Y}}(b')$ is well-corrected and $RCC_{\mathrm{obc}}(b, days)$ is obtained by non-degrade onboard calibration system, we can assume that the differences between $RCC_{\mathrm{obc}}(b, days)$ and $RCC_{\mathrm{Y}}(b', days)$ shows almost same tendency to decrease. However, the differences contains biases due to differences of SRFs, IFOV and registration error.

2.2 Theoretical background of radiative transfer

2.2.1 Radiative transfer equation

On vibible and near infrared wavelength band, we assume that the atmosphere is locally homogeneous in a horizontal direction, the atmosphere is called plane-parallel atmosphere. The radiances radiated by the sun are transmitted in the atmosphere while absorbing and scattering, and then these are transmitted to exoatmosphere by reflection on ground surface and sea surface while absorbing and scattering.

The sensors observe radiances which is transmitted to sensor among all of transmitted radiance. The radiance transmitted from the earth at exoatmosphere is called top of atmosphere radiance (TOA radiance).

Radiative transfer equation (RTE) indicates the process of transmitting. Chandrasekhar (1960, p. 12) shows RTE as below:

$$\mu \frac{dI(\tau, \mu, \phi)}{d\tau} = I(\tau, \mu, \phi) - J(\tau, \mu, \phi), \tag{2.6}$$

$J(\tau, \mu, \phi)$ is a source function, it can be shown as

$$\begin{aligned} J(\tau, \mu, \phi) &= \frac{\omega_0}{4\pi} \int_0^{2\pi} \int_{-1}^{1} I(\tau, \mu', \phi') P(\mu, \phi; \mu', \phi') d\mu' d\phi' && (2.7) \\ &+ \frac{\omega_0}{4\pi} P(\mu, \phi; \mu_0, \phi_0) F_0 \exp\left(-\frac{\tau}{\mu}\right) && (2.8) \\ &+ (1 - \omega_0) B(\tau), && (2.9) \end{aligned}$$

where τ is a optical thickness, μ is defined as $\mu = \cos\theta$, θ and ϕ are zenith and azimuth angle, $I(\tau, \mu, \phi)$ is the radiance in the direction (θ, ϕ), $P(\mu, \phi; \mu', \phi')$ is a phase function for the angle from (θ, ϕ) to (θ', ϕ'), ω_0 is single scattering albedo, F_0 is solar solar irradiance, $B(\tau)$ is Plank function.

Chandrasekhar (1960) solved the equation (2.6) on two sides at $\tau = 0$ (top of atmosphere) and at $\tau = \tau_1$ (arbitrary height from ground) as below:

$$I(0, +\mu, \phi) = I(\tau_1, +\mu, \phi) e^{-\tau_1/\mu} + \int_0^{\tau_1} e^{-t/\mu} J(t, +\mu, \phi) \frac{dt}{\mu}, \tag{2.10}$$

and

$$I(\tau_1, -\mu, \phi) = I(0, -\mu, \phi) e^{-\tau_1/\mu} + \int_0^{\tau_1} e^{-(\tau_1 - t)/\mu} J(t, -\mu, \phi) \frac{dt}{\mu}. \quad (p.\ 12) \tag{2.11}$$

The zenith angles $+\mu$ and $-\mu$ means upward (exoatmosphere) and downward (ground) direction, the term $\tau = 0$ means at the top of atmosphere. If the direction (μ, ϕ) points the sensor, we can take the meaning that equation 2.10 indicates $L(\lambda)$ (mentioned at section 2.1.1 as *observed* radiance).

2.2.2 Spectral solar irradiance (F_0)

The sun radiate energy based on function that it can be approximated as spectrum of blackbody radiation $T = 5780$K (T:Temperature, K:Kelvin).

2.2.3 Atmospheric constituents

The atmosphere has several kinds of particle. These are mainly moleculars (O_2, O_3, H_2O, CO_2) and aerosols in visible and near infrared band (wavelength in $0.4 - 1.0\mu m$). Especially, H_2O and O_2 causes to reduce the radiation in this band. The radiation is

attenuated by these moleculars and aerosols. Hence, optical thickness (τ) is consisted by those. Especially, optical thickness consisted by aerosols is called aerosol optical thickness (AOT), τ_{a}.

2.2.4 Optical Thickness (τ)

Optical Thickness indicates the attenuation of radiation in the atmosphere. Chandrasekhar (1960) argued, "A pencil of radiation traversing a medium will be weakened by its interaction with matter. If the specific intensity I_υ therefore becomes $I_\upsilon + dI_\upsilon$ after traversing a thickness ds in the direction of its propagation, we write

$$dI_\upsilon = -\kappa_\upsilon \rho I_\upsilon ds, \text{[numbered as (22)]}$$

where ρ is the density of the material. The quantity κ_υ introduced in this manner defines the *mass absorption* [atually extinction] *coefficient* for radioation of frequency υ"(p. 5). If we define

$$d\tau \equiv -\kappa\rho \, dz, \tag{2.12}$$

then we can get the optical thickness integrating between altitude from an earch surface $z = z$ and the top of atmosphere $z = \infty$ as

$$\tau = -\int_z^\infty \kappa\rho \, dz, \tag{2.13}$$

κ is mass extinction coefficient, ρ is density of the material. The equation means that the radiation $I(\tau, \mu, \phi)$ is reduced to the top of atmosphere $I(0, \mu, \phi)$ as

$$I(0, \mu, \phi) = I(\tau, \mu, \phi)e^\tau. \tag{2.14}$$

2.2.5 Aerosol

Aerosol is a solid or liquid particule with a size between $10^{-3} - 10\mu m$. The radiation is affected as attenuation by aerosols. There are many kinds of aerosol (e.g. particle of H_2SO_4 , sea salt, soil).

Aerosols mainly has parameters *complex index of refraction* and *size distribution function*.

Complex index of refraction

Complex index of refraction $\tilde{m}$ indicates optical characteristics. It is defined as,

$$\tilde{m} = m_r - m_i i, \tag{2.15}$$

where m_r indicates refraction of electromagnetic wave, m_i indicates absorption.

Size distribution function

Spatial distribution of aerosols is more variable than molecular, so that it is required as function called size distribution function. The function indicates particle size distribution of aerosol in a volume (such as cm^3). Cachorro, Frutos, Aplicada, Gonzalez, and Electrica (1993) described,

> The Junge size distribution function, $\eta(r)$, only depends on one parameter υ (Jugne, 1963):
>
> $$n(r) = Cr^{-(\upsilon+1)}, \quad \text{[numbered as (7)]}$$
>
> because C is hte normalization constant related to the particle concentration N by:
>
> $$N = \int_{r_1}^{r_2} Cr^{-(\upsilon+1)}dr. \quad \text{(p. 1586) [numbered as (8)]}$$

We requote Junge(1963)[2]. Junge parameter υ can be estimated by[2]:

$$\upsilon = \alpha + 2, \tag{2.16}$$

where α is angstrom exponent. Angstrom exponent α can be estimated by $\tau_a(\lambda_1)$ and $\tau_a(\lambda_2)$ as,

$$\alpha = \frac{\ln(\tau_a(\lambda_1)/\tau_a(\lambda_2))}{\ln(\lambda_2/\lambda_1)}, \tag{2.17}$$

where $\tau_a(\lambda_1)$ is AOT on wavelength λ_1.

Aerosol Optical Thickness (τ_a)

AOT can be expressed as,

$$\tau_a(\lambda) = B\lambda^{-\alpha}, \tag{2.18}$$

$$B \equiv 2^\alpha \pi^\alpha \int_0^\infty C(z) \int_0^\infty Q_e(x, \tilde{m}) x^{-(\alpha+1)} dx dz, \tag{2.19}$$

where λ is wavelength, B is called turbidity factor, α is called angstrom exponent, x is size parameter defined as $x = 2\pi r/\lambda$, m is complex index of refraction, $Q_e(x, \tilde{m})$ is extinction efficiency factor of aerosol, respectively.

[2]Junge C. E. (1965) Air Chemistry and Radiactivity. Academic Press, New York.

2.3 Remove biases due to difference of SRF

Cross calibration contains some errors due to key parameters (SRF, IFOV, Registration error). Bias due to difference of SRFs occurres error of degradation coefficient on cross calibration; Therefore it should be considered. If sensors X and Y observe same site simultaneously with same IFOV and non-registration error,

$$L_{\mathrm{Y}}(b') - L_{\mathrm{X}}(b) = \frac{\int_0^\infty L(\lambda) s_{\mathrm{Y}}(b', \lambda) d\lambda}{\int_0^\infty s_{\mathrm{Y}}(b', \lambda) d\lambda} - \frac{\int_0^\infty L(\lambda) s_X(b, \lambda) d\lambda}{\int_0^\infty s_X(b, \lambda) d\lambda} \quad (2.20)$$

$$= Bias_{\mathrm{SRF}}(X, Y). \quad (2.21)$$

In equation 2.21, $Bias(X, Y)$ is due to difference of SRFs only. Therefore, if we can estimate $L(\lambda)$, then we can estimate the bias $Bias_{\mathrm{SRF}}(X, Y)$. It can be estimated because MODTRAN®(see section 3.1.2) can estimate observed radiance $L(\lambda)$.

Chapter 3

Experiment

3.1 Materials

3.1.1 Sensor data

The data obtained by ASTER, MODIS, MISR, ETM+ were used in this study. The sensors ASTER, MODIS, MISR are on the satellite Terra. The sensor ETM+ is on the satellite Landsat7. Differences between the sensors are spatial resolutions, spectral response and registration. The sensors on Terra satellite were selected because data obtained by the sensors are same condition of observation why can observe same site simulateously. ETM+ was selected because it has nearly spatial resolutions and spectral response function as ASTER.

Table 3.1: This table shows specification of sensors in unit μm.

	ASTER (15m/px)	MISR (275m/px)	MODIS (250m/px)	ETM+ (30m/px)
Green	0.52 - 0.60 (band1)	0.558	none	0.52 - 0.60 (band2)
Red	0.63 - 0.69 (band2)	0.672	0.62 - 0.67 (band1)	0.63 - 0.69 (band3)
NIR	0.76 - 0.86 (band3N)	0.867	0.84 - 0.87 (band2)	0.75 - 0.90 (band4)

Note. In MISR, these wavelengths are center wavelength of band. MISR bandwidth in Green, Red, and NIR are 0.028, 0.022, 0.039 μm, respectively.

The sensor data were got from distribution site as table 3.2. These data were applied onboard calibration. The conditions for selection were set as below:

Sensor	Product name	URL
Terra/ASTER	Level 1B	http://earthexplorer.usgs.gov/
Terra/MODIS	MOD02QKM	http://ladsweb.nascom.nasa.gov/data/search.html
Terra/MISR	MI1B2T	http://l0dup05.larc.nasa.gov/MISR/cgi-bin/MISR/main.cgi
Landsat7/ETM+	Level 1T	http://earthexplorer.usgs.gov/

Table 3.2: We found calibrated sensor data from each sites.

- Year of period: Jan.2000 - Sep.2012
- Selected date: Overlapped with observation date of ASTER
- Not saturate, and not cloudy
- Target site:
  - Alkali Lake (37:51N, 117:25W), Altitude:1463m abbrv. AL
  - Ivanpah Playa (35:34N, 115:24W), Altitude:790m abbrv. IV
  - RailroadValley Playa (38:30N, 115:41N), Altitude:1440m abbrv. RV
- Target pixel: Containing the location that is enlarged tape (like blue sheet), where ground-based observation was carried out.

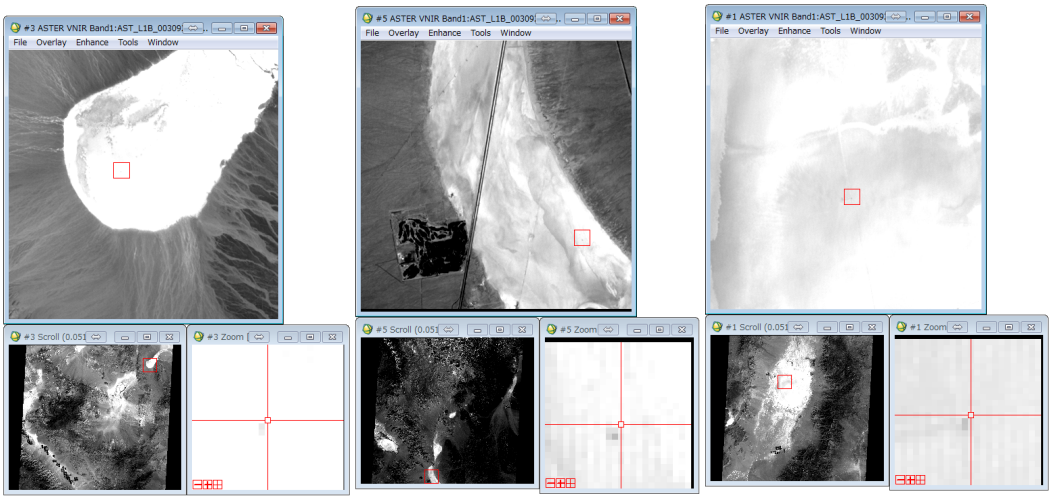
In order to avoid the effect of atmosphere and terrain, three target sites were selected. As shown fig 3.1, these are large homogeneous sites with thin atmosphere and no vegetation. In these target sites, ground reflectance is different each other (fig 3.2).

In ASTER and ETM+ image (as shown fig.3.1), we can decide the target pixel easily because the image has high spatial resolution (see table 3.1). On the other hand, it is difficult to decide the target pixel on the images of MISR and MODIS because the images has lower spatial resolution than ASTER. Hence, we decide the target pixel that it contains latitude and longitude of each ASTER images.

3.1.2 Data for simulation

For implementing error analysis of SRF changing and estimation biases, we should implement simulation. We implement simulation by using MODTRAN®5.2.0.0. On MODTRAN5 web page[1], MODTRAN®is described, "MODTRAN®is a 'narrow band

[1]http://modtran5.com/about/index.html, accessed at 2013/01/28.



(a) Alkali Lake (b) Ivanpah (c) RailroadValley

Figure 3.1: These photos show target sites and target pixels. Red square on lower-right images of (a)(2010/09/25), (b)(2010/09/20), and (c)(2010/09/27) shows target pixel in ASTER image.

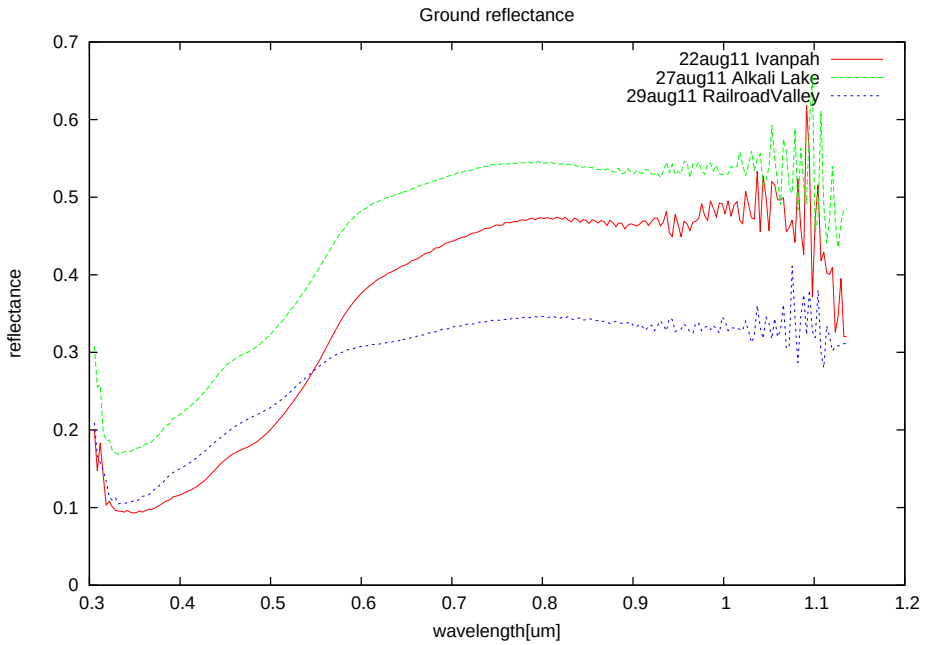


Figure 3.2: This graph shows the typical ground reflectance in each sites.

model' atmospheric radiative transfer code. ... MODTRAN®solve the radiative transfer equation including the effects of molecular and particulate absorption/emission and scattering, surface reflections and emission, solar/lunar illumination, and spherical refraction".

This code requires to input these data:

1. Atmospheric model based on latitude and longitude and season
2. Aerosol parameters (coefficients of extinction, absorption, and asymmetry)
3. Visibility or aerosol optical thickness (AOT), at $0.55\mu m$
4. Phase function of aerosol
5. Geometry on sensor and target
6. Days of the year
7. SRF (if simulate sensor data)
8. Vertial columns of O_3 and water vapor.
9. Altitude
10. Ground reflectance

In each testsite (fig 3.1), these are located at the middle latitudes and ground-based observations were almost carried out on summer. Hence, we assume the atmospheric model of mid-latitude summer.

For estimation each items (2 and 4), we should execute mie2new code that is contained in MODTRAN®. This code estimates these parameters: coefficients of aerosol (extinction, scattering, and absorption), asymmetric factor, and phase function. The code mie2new needs to input a size distribution function of aerosol, particle size and complex index of refraction. We assume size distribution function as Junge size distribution function (equation 2.16). It need junge parameter υ, we can estimate it from aerosol optical thickness.

Therefore, we get these data by ground-based observation as below:

- Ground reflectance (Instrument: MS-720)
- Aerosol optical thickness (Instrument: MICROTOPS-II sunphotonometer)
- O_3, and water vapor (Instrument: MICROTOP-II ozonometer)

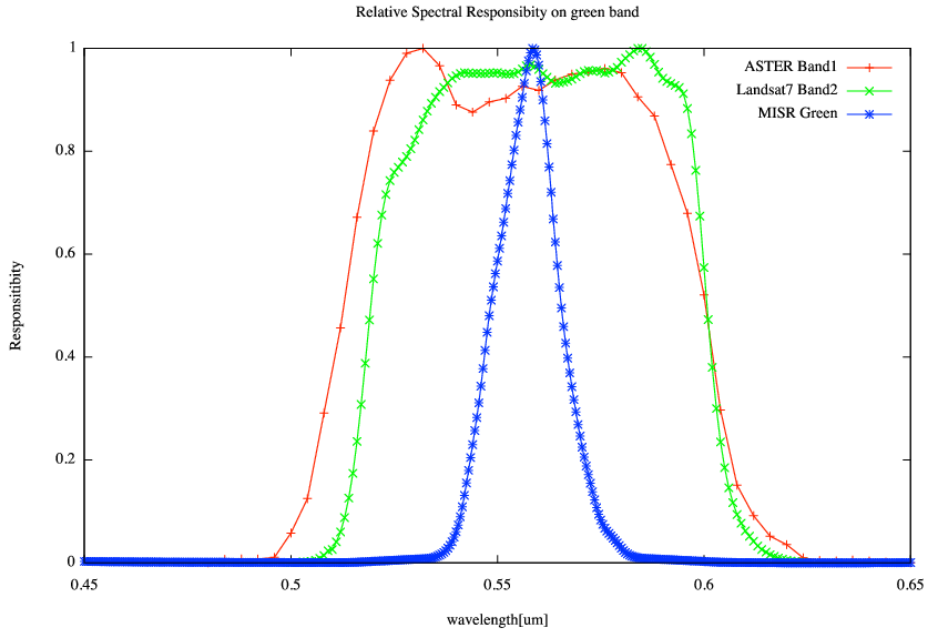


Figure 3.3: This graphs indicate SRF of green band on sensors ASTER, MODIS, MISR and ETM+.

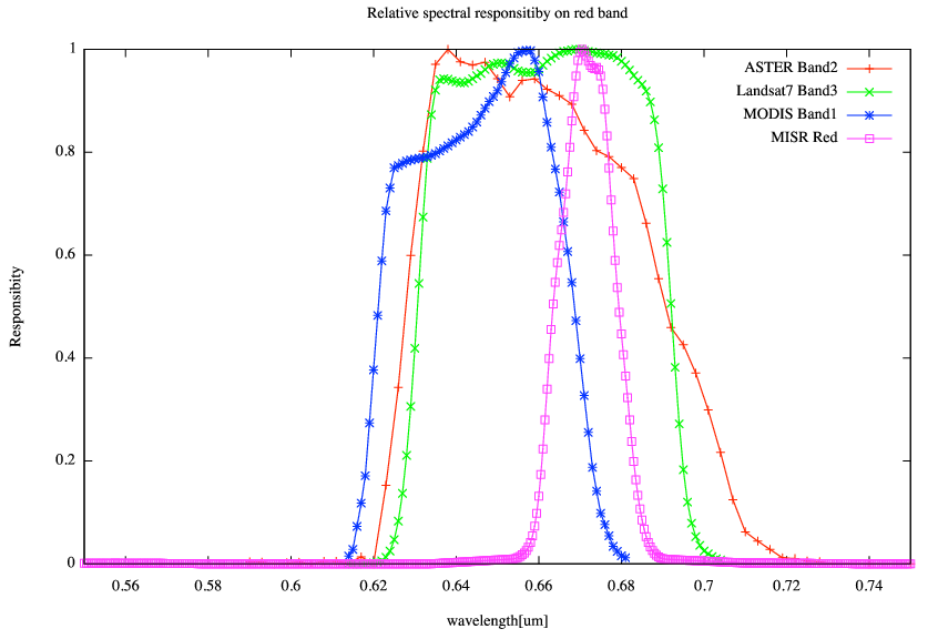


Figure 3.4: This graphs indicate SRFs of red band on sensors ASTER, MODIS, MISR and ETM+.

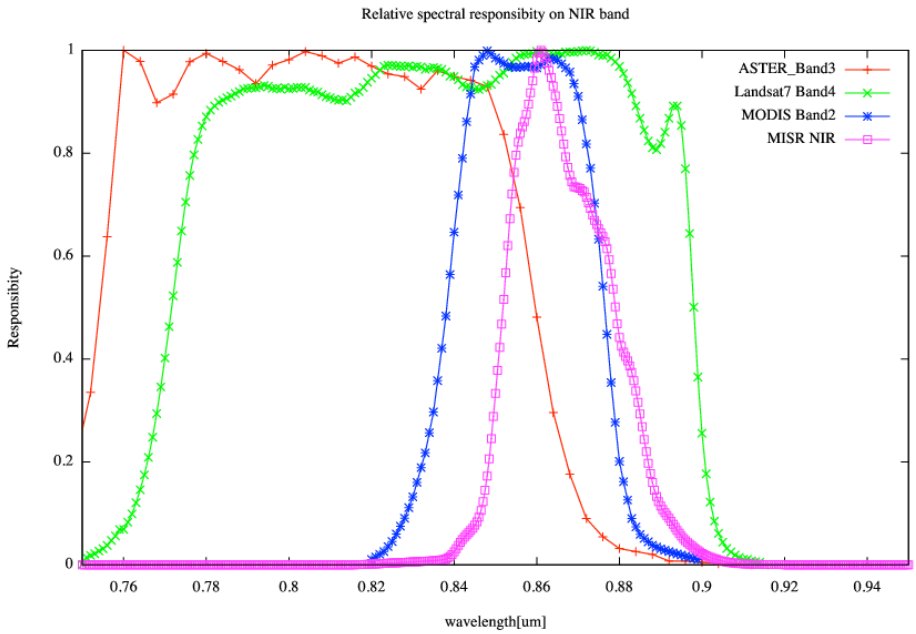


Figure 3.5: This graphs indicate SRFs of NIR band on sensors ASTER, MODIS, MISR and ETM+.

Adding to these data, we get SRFs[2] [3] to estimate sensor data (see fig 3.3, 3.4, and 3.5).

When we run this code, we assume these conditions:

- Size distribution function: Junge size distribution function based on junge parameter υ (equation 2.16)
- Paricle sizes: $0.2 - 10\mu m$
- Complex index of refraction: $1.44 - 0.005i$, empirical formula

3.2 Procedure

These experiments are designed on the premise that cross calibration written on sub section 3.2.1 is carried out.

3.2.1 Cross calibration

For obtaining $RCC_{\mathrm{Y}}(b', days)$ (equation 2.5), we should implement cross calibration. In this paper, ASTER L1B product image is indicated as $L_{\mathrm{L1B}}(b)$. We define the

[2]ASTER,MODIS, ETM+: http://landsat.usgs.gov/tools_spectralViewer.php
[3]MISR: http://misr.jpl.nasa.gov/Mission/valwork/mivcalres.html

degradation coefficient by comparing ASTER and other sensors based on the equation (2.5) as below:

$$RCC_{\mathrm{ETM+}}(b_G, days) = L_0(b_G)/L_{\mathrm{ETM+}}(b_G), \quad (3.1)$$

$$RCC_{\mathrm{MISR}}(b_G, days) = L_0(b_G)/L_{\mathrm{MISR}}(b_G) \quad (3.2)$$

where b_G indicate greenband, $L_0(b_G)$ is not corrected ASTER data on green band, $RCC_{\mathrm{ETM+}}(b_G, days)$ and $RCC_{\mathrm{MISR}}(b_G, days)$ are degradation coefficient of cross calibration obtained from each sensor data. Degradation coefficient on red band and NIR band are also defined. In red and NIR band, the coefficients $RCC_{\mathrm{MODIS}}(b_R, days)$ and $RCC_{\mathrm{MODIS}}(b_N, days)$ are also defined.

These coefficients are obtained from below procedures:

1. Convert digital number (DN) to radiance for all sensor data.
2. Select pixel in each sites and days from sensors ASTER, MISR, MODIS and ETM+.
3. Average pixels with size of the spatial resolution of a sensor targeted for a comparison because we make spatial resolutions the same size artificially.
4. ASTER data $L_{\mathrm{L1B}}(b)$ revert to $L_0(b)$ in each bands by using $RCC_{obc}(b, days)$ because $L_{\mathrm{L1B}}(b)$ is corrected data.
5. Calculate degradation coefficient by using obtained data.

Note that ASTER images are averaged with size of the spatial resolution of a sensor targeted for a comparison around pixel (targeted as condition *Target pixe* in section 3.1.1). The size of averaging are: ASTER v.s. ETM+ is 4x4(px), ASTER v.s. MISR is 56x56, ASTER v.s. MODIS is 50x50, respectively. ETM+ are also averaged with the size 3x3. MISR and MODIS does not need to average because the spatial resolutions are larger than ASTER.

3.2.2 Error analysis

For IFOV/Registration error

The error analysis obtains how much cross calibration (written on section 3.1.1 and 3.2.1) has error due to differences of IFOV and registration error. The analysis implement procedure as follows:

1. Select pixel and averaging range (same as procedure 3 in section 3.2.1). This procedure is shown as center small square on fig 3.6. Then, we calculate average.

2. Select pixel on the four corners, vertical and horizontal. Then, we calculate 8 averages same as above procedure.

3. Calculate changing rate between first average and other 8 averages as error.

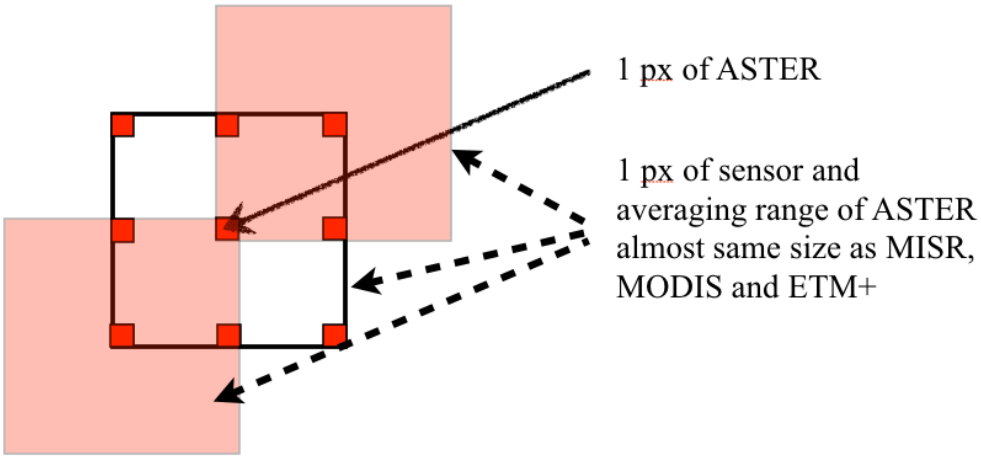


Figure 3.6: This image shows target pixels and averaging range of ASTER when we implement the error analysis. 9 small squares are center pixel of averaging range. The error analysis calculates changing rate between each averages.

We apply this error analysis for each sensor data that these are dated as follow: ASTER, MISR and MODIS are 2010/09/20(IV), 2010/09/25(AL), 2010/09/27(RV); ETM+ are 2010/09/20(IV), 2012/07/05(AL), 2010/09/27(RV). The reason that a date of ETM+ at AL was different from others is to be saturated.

For changing center wavelength of SRF

This error analysis obtains how much cross calibration has error due to change center wavelength (CW) of each SRFs. Xiong, Che, and Barnes (2006) reported, "Except for band 8, slightly over 0.6 nm, the CW shifts over the past five years are in general less than 0.5 nm"(p. 2203). Hence, the error due to changing CW should be analyzed if it occurs. When we analyze it, it is said that changing CW occurred ±5%.

Procedures for the error analysis are:

1. Calculate shift quantity by multiplying ±5% to each CW of SRFs calculated by 0.5%.

2. Add (or subtract) shift quantities to (from) each SRFs.

3. Estimate sensor date by using shifted SRF.

4. Calculate rate of changing between non-shift estimated sensor data and shifted.

For the error analysis, we implement simulation by using ground-based observation dated as 2011/08/22 (IV), 2011/08/27 (AL) and 2011/08/29 (RV).

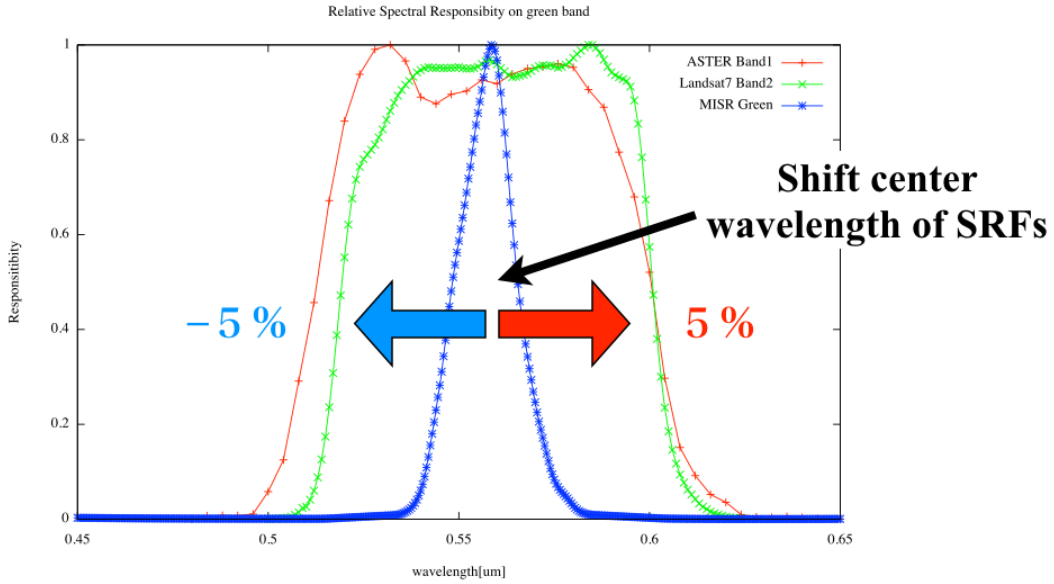


Figure 3.7: This image explain to change center wavelength (CW) of SRFs shifted ±5% of each CWs.

3.2.3 Estimate biases

Because obtained data are affected by several factors, we can not focus on the difference between SRFs. Hence, we should estimate the biases between ASTER and other sensors by simulation.

Each sensor data can estimate on same conditions except SRF, so that the differences between estimated data only be caused by difference of SRF. These conditions are ground reflectance, atmospheric state, SRF, and others. In the next, the differences between estimated ASTER and other sensor data are calculated as biases. In last, the biases are subtracted from obtained sensor data and then we evaluate the validity of proposed method.

Therefore, we estimate biases as below procedures:

1. Estimate sensor data by using existed ground-based observation data.
2. Subtract estimated ASTER data from other estimated sensor data.
3. Calculate average in each band (green, red, NIR) and sites (AL, IV, RV).

We found some ground-based observation data (see table 3.3).

Table 3.3: We found ground-based observation data dated as this table. The contents are formatted as XXXX MM/DD/YYYY, where XXXX is days since launch (DSL) ASTER, MM/DD/YYYY are month, date and year, respectively.

AL	IV	RV
2159 12/16/2005	0905 06/10/2002	2415 07/30/2006
2829 09/17/2007	2184 12/11/2005	3199 09/21/2008
3197 09/19/2008	2424 08/08/2006	3551 09/08/2009
3549 09/06/2009	2536 11/28/2006	3935 09/27/2010
3935 09/25/2010	2824 09/12/2007	4272 08/29/2011
4270 08/27/2011	3192 09/14/2008	4656 09/16/2012
	3727 12/03/2008	
	3544 09/01/2009	
	3928 09/20/2010	
	4265 08/22/2011	
	4649 09/09/2012	

3.3 Result and Discussion

3.3.1 Estimation biases

We got biases in each sites IV, AL and RV as table 3.4 and 3.5. We use MODTRAN®tape5 settings. See appendix C. Those tape5 files depend on ground-based observation, appendix A. In green and red band, biases between ASTER and other sensors are small. Biases between ASTER and ETM+ are especially smaller than other sensors because those SRFs are almost overlapped (as shown in fig 3.3, 3.4, 3.5). SRFs between ASTER-MISR and ASTER-MODIS are also overlapped. Hence, we could get results in green and red band that difference of SRF has small influences.

We could observe that biases in NIR band are larger than other bands. Firstly, SRFs of NIR band between ASTER and other sensors were little overlapped except ETM+. Second, spectral solar irradiance in NIR band are greatly decreases . Third, ground reflectance does not influence $L(\lambda)$ very much because it almost flat in NIR band (shown in fing 3.2). Hence, we could get results in NIR band; Difference of SRFs has greatly influences $L(\lambda)$ how degradation coefficients are increased because MISR, MODIS and ETM+ are smaller than ASTER.

Table 3.4: Biases between ASTER and other sensors on band green and red. The unit of values is W m^{-2} sr^{-1} μm^{-1}. CI : Confidence Interval.

		Green		Red		
		vsETM	vsMISR	vsETM	vsMISR	vsMODIS
RVPN (N=6)	average (SD)	0.88 (0.11)	2.34 (0.20)	-0.08 (0.12)	2.23 (0.28)	2.12 (0.29)
	95% CI	[0.74, 1.02]	[2.09, 2.60]	[-0.23, 0.07]	[1.87, 2.59]	[1.75, 2.50]
IV (N=11)	average (SD)	1.80 (0.54)	1.38 (0.45)	0.03 (0.15)	3.33 (0.90)	1.15 (1.33)
	95% CI	[1.38, 2.24]	[1.02, 1.74]	[-0.09, 0.15]	[2.61, 4.04]	[0.09, 2.21]
AL (N=6)	average (SD)	1.41 (0.69)	1.46 (0.58)	-0.05 (0.16)	2.47 (1.02)	2.26 (0.72)
	95% CI	[0.52, 2.31]	[0.72, 2.21]	[-0.26, 0.15]	[1.16, 3.79]	[1.33, 3.19]

Table 3.5: Biases between ASTER and other sensors on band NIR. The unit of values is W m^{-2} sr^{-1} μm^{-1}. CI : Confidence Interval.

		NIR		
		vsETM	vsMISR	vsMODIS
RVPN (N=6)	average (SD)	-2.67 (0.33)	-7.96 (1.37)	-6.65 (1.14)
	95% CI	[-3.10, -2.24]	[-9.72, -6.19]	[-8.12, -5.18]
IV (N=11)	average (SD)	-1.81 (1.14)	-6.71 (1.83)	-5.09 (1.76)
	95% CI	[-2.72, -0.90]	[-8.17, -5.25]	[-6.49, -3.69]
AL (N=6)	average (SD)	-2.80 (0.97)	-8.94 (1.62)	-7.37 (1.41)
	95% CI	[-4.06, -1.55]	[-11.04, -6.85]	[-9.19, -5.54]

3.3.2 Result of error analysis

We got errors due to changing of CW (table 3.6) and IFOV/Registration error (table 3.7, 3.8). Most of errors due to changing of CW are small except NIR band of ETM+ and ASTER. NIR band of ETM+ and ASTER are wide bandwidth (fig 3.5); Spectral solar irradiance on NIR band are suddenly decreased; therefore, the error could occur.

Result of error analysis for difference of IFOV/registration error were shown. As shown fig 3.7, errors vsMODIS and vsMISR have greatly influences because of selecting wide area. MISR and MODIS also has influences. As a result being common in table 3.7 and 3.8, errors at RV are smaller than other sites. It means that RV are widely homogeneous site spectrally. Hence, cross calibration on RV can be implemented with high reliability.

Table 3.6: This table indicates error due to changing of CW on each sensors.

	Green	Red	NIR
ASTER	0.2%	0.4%	0.9%
ETM+	0.2%	0.5%	1.6%
MISR	0.1%	0.1%	0.4%
MODIS	None	0.1%	0.3%

Table 3.7: ASTER data have errors due to difference of IFOV and registration error between sensors.

	ASTER	Green	Red	NIR
AL	vsETM	1.5%	1.7%	1.8%
	vsMISR	3.2%	3.7%	3.7%
	vsMODIS	None	4.0%	4.0%
IV	vsETM	1.2%	1.7%	1.5%
	vsMISR	3.2%	3.3%	3.0%
	vsMODIS	None	3.3%	2.9%
RV	vsETM	1.1%	1.7%	2.2%
	vsMISR	1.4%	2.0%	2.4%
	vsMODIS	None	1.9%	2.3%

Table 3.8: These values indicate the errors of ETM+, MISR and MODIS due to the differences.

		Green	Red	NIR
ETM+	AL	1.5%	1.7%	2.3%
	IV	1.2%	1.7%	2.0%
	RV	1.1%	1.7%	2.5%
MISR	AL	4.0%	3.9%	4.5%
	IV	4.7%	4.7%	4.7%
	RV	2.7%	2.6%	2.8%
MODIS	AL	None	4.6%	5.3%
	IV	None	2.7%	2.7%
	RV	None	1.3%	1.2%

3.3.3 Result of cross calibration

We got sensor data (see appendix B). Firstly, we subtracted biases from obtained sensor (ETM+, MISR, MODIS) data. Seconde, we calculate degradation coefficient. Last, we showed the result of cross calibration with result of error analysis (fig 3.8), 3.9, 3.10). In each images, we explain as:

- RCC OBC means $RCC_{\mathrm{obc}}(b, days)$.
- X axis means days since launch ASTER.
- Y axis means the degradation coefficient.
- Errorbars means minimum and maximum of the coefficient by errors.

Each upper images are not corrected data, lower images are corrected data.

In green and red band, the effect of correcting biases are relatively small (fig 3.8 and 3.9); Therefore, as a result of consideration of spectral responsibility, errors due to difference of IFOV/registration error mainly influence in these bands. On the other hand, difference of SRFs have little influence cross calibration.

In NIR band: The effect of correcting biases have greatly influenced cross calibration (as shown fig 3.10); errors due to differences of IFOV/registration error also have influences same as green and red band; Therefore, biases should be corrected so that we reduce the error on cross calibration.

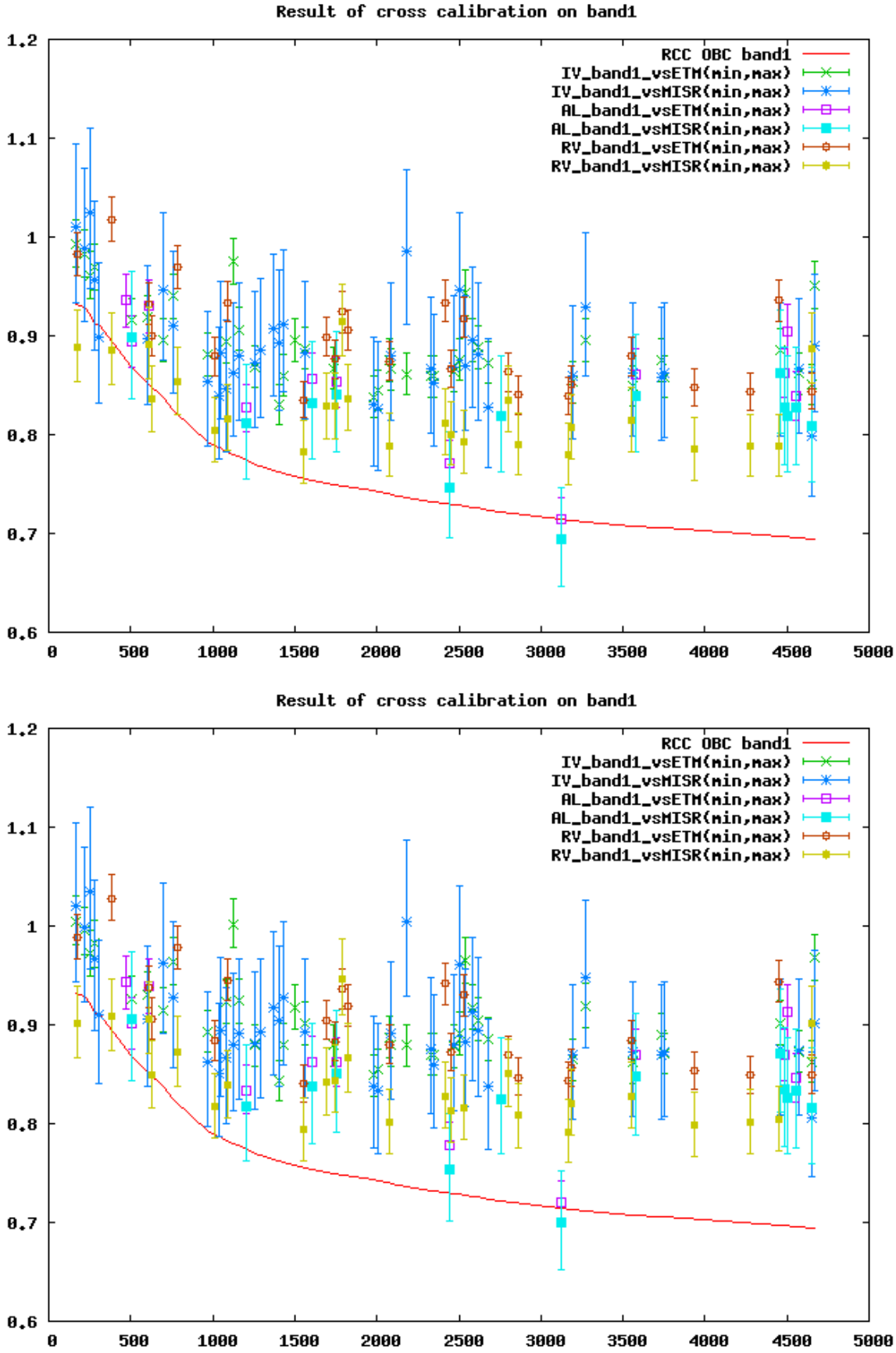


Figure 3.8: Result of cross calibration on Green band. Upper image: not corrected, Lower image: corrected.

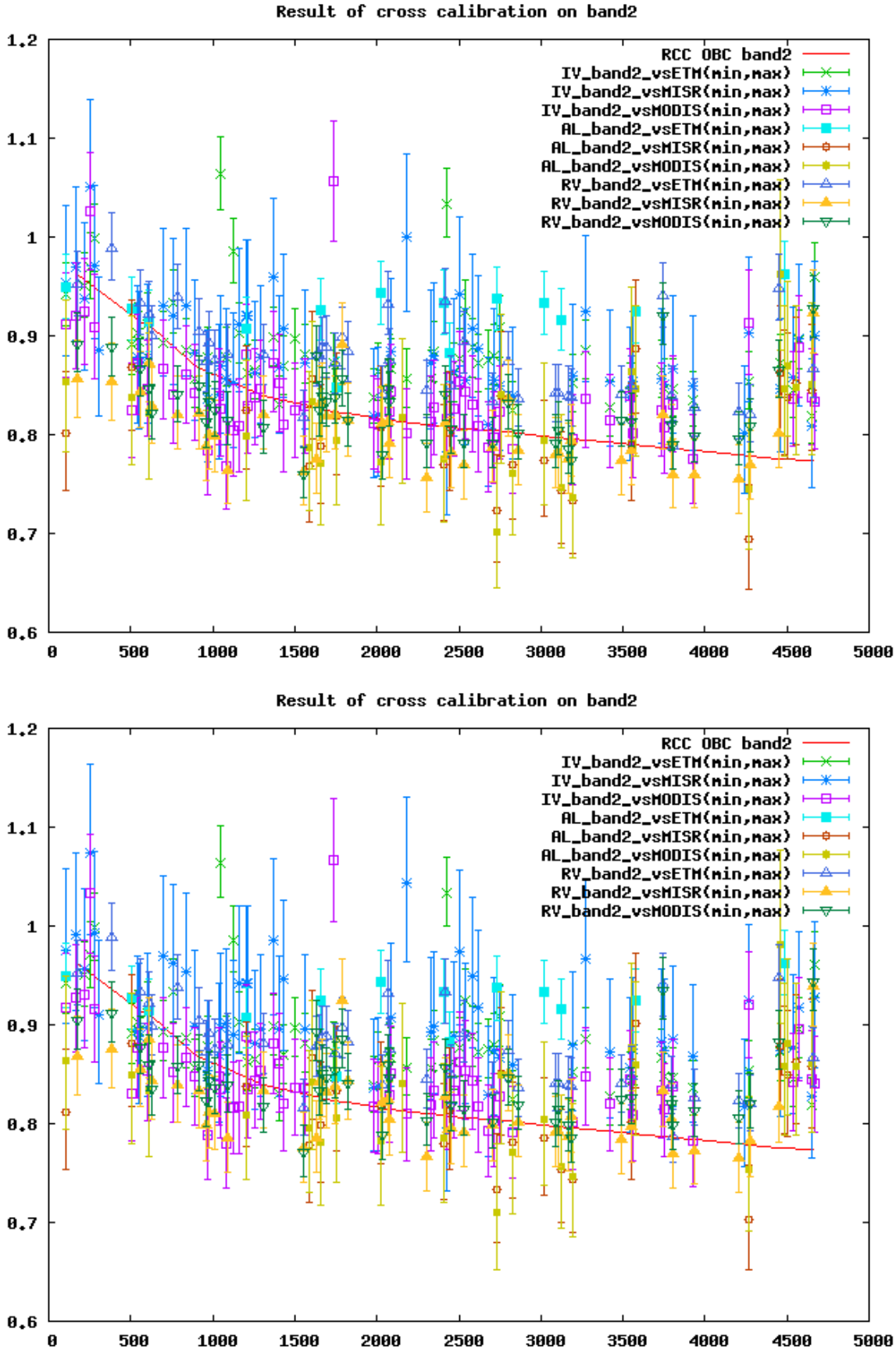


Figure 3.9: Result of cross calibration on Red band. Upper image: not corrected, Lower image: corrected. ETM+ data are almost saturated.

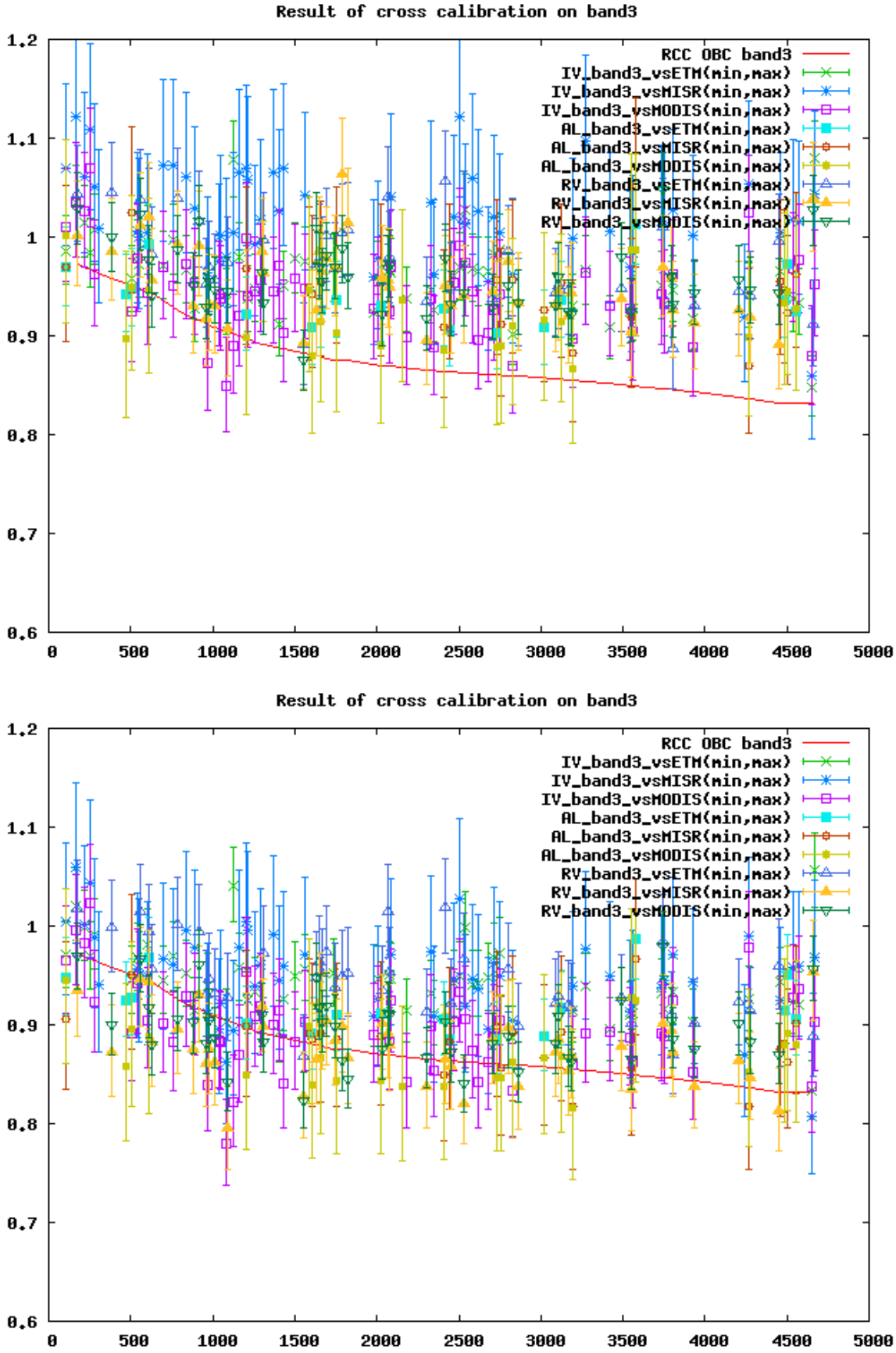


Figure 3.10: Result of cross calibration on NIR band. Upper image: not corrected, Lower image: corrected.

3.4 Summary of experiment

From these experiments, we get the results:

- Biases can estimate.
- In green and red band: the effect of differences of SRFs have little influences. Except for MISR on band red at IV, the influences are less than 3.00(W m^{-2} sr^{-1} μm^{-1}). The error are mainly caused by differences of IFOV/registration error.
- In NIR band: the effect of differences of SRFs have *greatly influences*. Biases should be corrected.

The results are obtained by considering characteristics of spectral responsibility of sensors. It means that the error on cross calibration can be reduced. Hence, proposed method for consideration characteristics of spectral responsibility by correcting (subtracting) biases is valid.

Chapter 4

Conclusion and Future work

4.1 Conclusion

In literatures, spectral responsibility of the sensor was not considered, so that we investigated the method for consideration of the characteristics by estimating and subtracting biases from each sensor data. We carried out several error analysis, estimation biases, and cross calibration; We apply the result of error analysis and estimation biases. As a result, we could get the result that proposed method is valid.

4.2 Future work

We estimated biases between sensors simply by averaging. For implementation cross calibration with more accurately and reliability, we should take other statistical estimation to subtract (correct) biases.

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Appendix A

Observation data list for simulation

A.1 At Alkali Lake

Table A.1: Ground-based observation result at Alkali Lake.

Date[MM/DD/YY]	08/27/11	09/25/10	09/06/09	09/19/08	09/17/07	12/16/05
Day of year (DOY)	239	268	249	262	260	350
Days since launch (DSL)	4270	3933	3549	3197	2829	2189
Junge Parameter 340-870	3.15	3.92	3.26	2.06	3.44	2.78
Junge Parameter 500-870	3.01	4.16	3.36	2.69	3.34	2.92
Aerosol Optical Thickness (500nm)	0.1	0.089	0.18	0.058	0.081	0.053
Pressure[hPa]	858	861	856	929	853	853
Solar Zenith Angle (degree)	28.86			36.52	37.69	61.91
Relative Solar Azimuth Angle	-149.31					
Ozone Column ($Atm-cm$)	0.25	0.23	0.27	0.25	0.31	0.28
Water Vaper (g/cm^2)	1.22	0.16	0.65	0.43	0.44	0.11

A.2 At RailroadValley

Table A.2: Ground-based observation result at RailroadValley.

Date[MM/DD/YY]	09/16/12	08/29/11	09/27/10	09/08/09	09/21/08	07/30/06
Day of year (DOY)	260	241	270	251	264	211
Days since launch (DSL)	4656	4272	3935	3551	3199	2415
Junge Parameter 340-870	3.29	3.38	3.18	3.08	2.54	3.33
Junge Parameter 500-870	2.94	3.58	3.14	3.06	3.11	3.34
Aerosol Optical Thickness (500nm)	0.08	0.08	0.038	0.056	0.059	0.13
Pressure[hPa]	864	857	860	856	855	857
Solar Zenith Angle (degree)	38.63	30.33				
Ozone Column (Atm-cm)	0.22	0.24	0.24	0.26	0.23	0.25
Ozone Column [DU]	219		237.2	258.8	232.5	248.8
Water Vaper (g/cm^2)	0.32	1.06	0.23	0.52	0.41	1.26

A.3 At Ivanpah

Table A.3: Ground-based observation result at Ivanpah (continue to next page)

Date[MM/DD/YY]	09/09/12	08/22/11	09/20/10	09/01/09	12/03/08	09/19/08
Day of year (DOY)	253	234	263	244	337	262
Days since launch (DSL)	4649	4265	3928	3544	2036	3197
Junge Parameter 340-870	3.51	3.72	3.04	3.07	2.72	2.06
Junge Parameter 500-870	3.98	3.67	2.92	3.16	3.15	2.69
Aerosol Optical Thickness (500nm)	0.259	0.07	0.03	0.3	0.062	0.058
Pressure[hPa]	858	927	920	927	933	929
Solar Zenith Angle (degree)	35.55	29.26		30.21	39.45	36.52
Relative Solar Azimuth Angle	-137.49	-140.34				
Ozone Column (Atm-cm)	0.23	0.23	0.24	0.28	0.23	0.25
Water Vaper (g/cm^2)	1.54	1.08	0.61	0.91	0.41	0.43

Table A.4: Ground-based observation result at Ivanpah (finish)

Date[MM/DD/YY]	09/12/07	11/28/06	08/08/06	12/11/05	06/10/02
Day of year (DOY)	255	332	220	345	161
Days since launch (DSL)	2824	2536	2424	2184	905
Junge Parameter 340-870	3.06	2.86	3.37	2.13	3.85
Junge Parameter 500-870	2.75	3.15	3.05	2.91	3.54
Aerosol Optical Thickness (500nm)	0.042	0.044	0.033	0.024	0.053
Pressure[hPa]	925	924	928	934	921
Solar Zenith Angle (degree)		58.02	25.83	59.16	30.76
Relative Solar Azimuth Angle					
Ozone Column (Atm-cm)	0.24	0.27	0.24	0.26	0.29
Water Vaper (g/cm^2)	0.89	0.26	1.14	0.26	0.17

Appendix B

Observations date list for cross calibration

We get sensor data as these tables.

Table B.1: Dates for cross calibration in each sites. (continue to table B.2)

RV			IV			AL		
date	DOY	DSL	date	DOY	DSL	date	DOY	DSL
20000611	163	176	20000401	92	105	20000330	90	103
20010105	5	384	20000604	156	169	20010402	92	471
20010630	181	560	20000722	204	217	20010504	124	503
20010817	229	608	20000823	236	249	20010824	236	615
20010902	245	624	20000924	268	281	20030408	98	1207
20020209	40	784	20001017	291	304	20040426	117	1591
20020516	136	880	20010506	126	505	20040512	133	1607
20020617	168	912	20010607	158	537	20040629	181	1655
20020804	216	960	20010623	174	553	20041003	277	1751
20020820	232	976	20010810	222	601	20050702	183	2023
20020921	264	1008	20011114	318	697	20051216	350	2159
20021210	344	1088	20020117	17	761	20060721	202	2407
20030706	187	1296	20020407	97	841	20060822	234	2439
20030722	204	1312	20020525	145	889	20070606	157	2727
20040318	78	1552	20020813	225	969	20070708	189	2759
20040606	158	1632	20021023	296	1040	20070917	260	2829
20040622	174	1648	20021101	305	1049	20080320	80	3015
20040708	190	1664	20021203	337	1081	20080710	192	3127
20040809	222	1696	20030120	20	1129	20080919	262	3197
20040926	270	1744	20030221	52	1161	20090906	249	3549
20041113	318	1792	20030401	91	1200	20091001	274	3575
20041215	350	1824	20030410	100	1209	20100925	268	3935
20050711	192	2032	20030528	148	1257	20110827	239	4270
20050812	224	2064	20030629	180	1289	20120228	59	4455
20050828	240	2080	20030917	276	1369	20120331	91	4487
20060409	99	2304	20031019	292	1401	20120416	107	4503
20060730	211	2416	20031120	324	1433	20120603	155	4551
20060831	243	2448	20040123	23	1497	20120705	187	4583
20061119	323	2528	20040327	87	1561	20120914	258	4654

Table B.2: Dates for cross calibration in RV and IV. (continued from table B.1)

RV			IV		
date	DOY	DSL	date	DOY	DSL
20070514	134	2704	20040919	263	1737
20070818	230	2800	20050517	137	1977
20071021	294	2864	20050618	169	2009
20080601	153	3088	20050821	233	2073
20080617	169	3104	20050906	249	2089
20080820	233	3168	20051211	345	2185
20080905	249	3184	20060504	124	2329
20090706	187	3488	20060520	140	2345
20090908	251	3552	20060808	220	2425
20100319	78	3744	20060925	268	2473
20100506	126	3792	20061027	300	2505
20100522	142	3808	20061128	332	2537
20100927	270	3936	20070115	15	2585
20110626	177	4208	20070216	47	2617
20110829	241	4272	20070421	111	2681
20120221	52	4448	20070523	143	2713
20120916	4656	4649	20070624	175	2745
			20070912	255	2825
			20080914	258	3193
			20081203	338	3273
			20090426	116	3417
			20090901	244	3545
			20090917	260	3561
			20100312	71	3737
			20100328	87	3753
			20100515	135	3801
			20100920	263	3929
			20110728	199	4240
			20110822	234	4265
			20120301	61	4457
			20120520	141	4537
			20120621	173	4569
			20120909	253	4649
			20120925	268	4665

Appendix C

TAPE5 files applied ASTER SRF for MODTRAN®

Show tape5 files applied ASTER SRF only. If we estimate other sensor data by using tape5 files, replace ASTER SRF to other sensor SRF.

C.1 At Ivanpah

06/10/2002

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C␣␣␣2␣␣␣␣3␣␣␣␣2␣␣␣-1␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣306.25␣␣␣␣␣-1
FFF␣0␣␣␣␣0␣390.00000␣␣␣␣g␣0.17␣␣␣a␣0.29␣01␣F␣T␣F␣F
DATA/Filter/ASTER_vnir.flt
␣␣␣␣7␣␣␣␣0USS␣0␣␣␣10␣␣␣␣0␣␣␣␣0␣␣␣␣␣␣␣99.87676␣␣0.0␣␣␣␣␣␣␣0.0␣␣␣␣␣␣.000␣␣␣␣␣0.793
␣␣␣␣7␣␣␣␣0␣␣␣␣0␣␣␣␣0
␣1.000E+00Boundary␣Layer
␣0.340␣1.7031␣0.0682␣0.725␣0.360␣1.5094␣0.0613␣0.718␣0.400␣1.4238␣0.0570␣0.708
␣0.500␣1.1595␣0.0467␣0.699␣0.675␣0.7630␣0.0331␣0.673␣0.870␣0.5416␣0.0244␣0.628
␣1.020␣0.4313␣0.0206␣0.645
␣␣␣705.000␣␣␣␣␣␣.000␣␣␣180.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣0
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␣␣␣29␣␣␣␣7
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␣␣␣␣␣␣␣␣3␣␣␣␣␣␣␣␣4␣␣␣␣␣␣␣␣5␣␣␣␣␣␣␣␣10␣␣␣␣␣␣␣␣20␣␣␣␣␣␣␣␣30␣␣␣␣␣␣␣␣40␣␣␣␣␣␣␣␣50
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␣␣␣␣␣␣␣␣140␣␣␣␣␣␣␣␣150␣␣␣␣␣␣␣␣160␣␣␣␣␣␣␣␣170␣␣␣␣␣␣␣␣180
␣␣␣␣␣␣0.340␣␣␣␣␣␣0.380␣␣␣␣␣␣0.400␣␣␣␣␣␣0.500␣␣␣␣␣␣0.675␣␣␣␣␣␣0.870␣␣␣␣␣␣1.020
␣3.485E+00␣1.351E-02␣2.444E+00␣1.272E-02␣1.156E-02␣2.139E+00␣8.025E-03
␣2.585E+00␣1.422E-02␣1.876E+00␣1.221E-02␣1.066E-02␣1.694E+00␣7.334E-03
␣1.982E+00␣1.319E-02␣1.607E+00␣1.099E-02␣9.604E-03␣1.466E+00␣8.577E-03
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␣1.697E+00␣1.189E-02␣1.438E+00␣9.968E-03␣9.716E-03␣1.319E+00␣9.338E-03
␣1.516E+00␣1.069E-02␣1.316E+00␣9.758E-03␣1.078E-02␣1.211E+00␣9.095E-03
␣1.385E+00␣8.789E-03␣1.220E+00␣1.064E-02␣1.215E-02␣1.124E+00␣8.482E-03
␣1.281E+00␣7.371E-03␣1.139E+00␣1.178E-02␣1.291E-02␣1.050E+00␣8.677E-03
␣1.194E+00␣7.809E-03␣1.069E+00␣1.215E-02␣1.289E-02␣9.863E-01␣9.685E-03
␣1.117E+00␣9.522E-03␣9.484E-01␣1.172E-02␣1.286E-02␣8.751E-01␣1.045E-02
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␣7.040E-01␣1.432E-02␣6.134E-01␣1.389E-02␣1.680E-02␣5.645E-01␣1.391E-02
␣6.317E-01␣1.575E-02␣5.527E-01␣1.284E-02␣1.537E-02␣5.082E-01␣1.337E-02
␣5.659E-01␣1.490E-02␣4.480E-01␣1.184E-02␣1.420E-02␣4.108E-01␣1.239E-02
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␣2.585E+00␣1.422E-02␣1.876E+00␣1.221E-02␣1.066E-02␣1.694E+00␣7.334E-03
␣1.982E+00␣1.319E-02␣1.607E+00␣1.099E-02␣9.604E-03␣1.466E+00␣8.577E-03
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␣1.622E-02␣1.622E-02␣1.238E-02␣1.238E-02␣1.301E-02␣1.915E-02␣1.915E-02

␣3.485E+00␣1.351E-02␣2.444E+00␣1.272E-02␣1.156E-02␣2.139E+00␣8.025E-03
␣2.585E+00␣1.422E-02␣1.876E+00␣1.221E-02␣1.066E-02␣1.694E+00␣7.334E-03
␣1.982E+00␣1.319E-02␣1.607E+00␣1.099E-02␣9.604E-03␣1.466E+00␣8.577E-03
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␣1.385E+00␣8.789E-03␣1.220E+00␣1.064E-02␣1.215E-02␣1.124E+00␣8.482E-03
␣1.281E+00␣7.371E-03␣1.139E+00␣1.178E-02␣1.291E-02␣1.050E+00␣8.677E-03
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␣7.854E-01␣1.308E-02␣6.817E-01␣1.394E-02␣1.724E-02␣6.275E-01␣1.309E-02
␣7.040E-01␣1.432E-02␣6.134E-01␣1.389E-02␣1.680E-02␣5.645E-01␣1.391E-02
␣6.317E-01␣1.575E-02␣5.527E-01␣1.284E-02␣1.537E-02␣5.082E-01␣1.337E-02
␣5.659E-01␣1.490E-02␣4.480E-01␣1.184E-02␣1.420E-02␣4.108E-01␣1.239E-02
␣4.488E-01␣1.297E-02␣3.589E-01␣1.198E-02␣1.421E-02␣3.313E-01␣1.287E-02
␣3.504E-01␣1.279E-02␣2.831E-01␣1.300E-02␣1.505E-02␣2.695E-01␣1.476E-02
␣2.742E-01␣1.470E-02␣2.211E-01␣1.335E-02␣1.530E-02␣2.227E-01␣1.568E-02
␣2.226E-01␣1.575E-02␣1.757E-01␣1.757E-01␣1.677E-01␣1.850E-01␣1.850E-01
␣1.852E-01␣1.852E-01␣1.431E-01␣1.431E-01␣1.354E-01␣1.504E-01␣1.504E-01
␣1.526E-01␣1.526E-01␣1.181E-01␣1.181E-01␣1.139E-01␣1.188E-01␣1.188E-01
␣1.210E-01␣1.210E-01␣9.633E-02␣9.633E-02␣9.648E-02␣9.386E-02␣9.386E-02
␣9.115E-02␣9.115E-02␣7.559E-02␣7.559E-02␣7.954E-02␣7.680E-02␣7.680E-02
␣6.540E-02␣6.540E-02␣5.636E-02␣5.636E-02␣6.306E-02␣6.602E-02␣6.602E-02
␣4.546E-02␣4.546E-02␣3.470E-02␣3.470E-02␣4.264E-02␣5.550E-02␣5.550E-02
␣2.713E-02␣2.713E-02␣2.359E-02␣2.359E-02␣2.867E-02␣4.559E-02␣4.559E-02
␣1.912E-02␣1.912E-02␣1.788E-02␣1.788E-02␣1.915E-02␣3.461E-02␣3.461E-02
␣1.622E-02␣1.622E-02␣1.371E-02␣1.371E-02␣1.400E-02␣2.549E-02␣2.549E-02
␣1.622E-02␣1.622E-02␣1.238E-02␣1.238E-02␣1.301E-02␣1.915E-02␣1.915E-02
␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣1.1␣␣␣␣␣␣0.005␣␣␣␣␣␣␣0.01RM␣10jun02MGA␣␣␣T
␣␣␣␣0

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C␣␣␣2␣␣␣␣3␣␣␣␣2␣␣␣-1␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣306.25␣␣␣␣␣-2
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DATA/Filter/ASTER_vnir.flt
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␣␣␣␣7␣␣␣␣0␣␣␣␣0␣␣␣␣0
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␣0.340␣1.4111␣0.0858␣0.742␣0.360␣1.2968␣0.0782␣0.738␣0.400␣1.2558␣0.0743␣0.733
␣0.500␣1.1082␣0.0632␣0.727␣0.675␣0.8505␣0.0482␣0.713␣0.870␣0.6818␣0.0378␣0.687
␣1.020␣0.5938␣0.0329␣0.703

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␣␣␣29␣␣␣␣7
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␣␣␣␣␣␣␣␣␣3␣␣␣␣␣␣␣␣4␣␣␣␣␣␣␣␣␣5␣␣␣␣␣␣␣␣10␣␣␣␣␣␣␣␣20␣␣␣␣␣␣␣␣30␣␣␣␣␣␣␣␣40␣␣␣␣␣␣␣␣50
␣␣␣␣␣␣␣␣60␣␣␣␣␣␣␣␣70␣␣␣␣␣␣␣␣80␣␣␣␣␣␣␣␣90␣␣␣␣␣␣␣␣100␣␣␣␣␣␣␣␣110␣␣␣␣␣␣␣␣120␣␣␣␣␣␣␣␣130
␣␣␣␣␣␣␣␣140␣␣␣␣␣␣␣␣150␣␣␣␣␣␣␣␣160␣␣␣␣␣␣␣␣170␣␣␣␣␣␣␣␣180
␣␣␣␣␣␣0.340␣␣␣␣␣␣0.380␣␣␣␣␣␣0.400␣␣␣␣␣␣0.500␣␣␣␣␣␣0.675␣␣␣␣␣␣0.870␣␣␣␣␣␣1.020
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␣␣7.550E+00␣␣1.266E-02␣␣3.847E+00␣␣1.053E-02␣␣8.957E-03␣␣3.573E+00␣␣6.396E-03
␣␣3.966E+00␣␣1.144E-02␣␣2.695E+00␣␣9.361E-03␣␣7.679E-03␣␣2.558E+00␣␣8.256E-03
␣␣2.784E+00␣␣1.053E-02␣␣2.122E+00␣␣8.138E-03␣␣7.825E-03␣␣2.034E+00␣␣9.316E-03
␣␣2.196E+00␣␣9.607E-03␣␣1.776E+00␣␣7.990E-03␣␣9.219E-03␣␣1.716E+00␣␣8.707E-03
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␣␣1.595E+00␣␣5.815E-03␣␣1.369E+00␣␣1.104E-02␣␣1.172E-02␣␣1.333E+00␣␣7.752E-03
␣␣1.414E+00␣␣6.701E-03␣␣1.234E+00␣␣1.150E-02␣␣1.137E-02␣␣1.204E+00␣␣9.290E-03
␣␣1.273E+00␣␣9.266E-03␣␣1.031E+00␣␣1.083E-02␣␣1.112E-02␣␣1.006E+00␣␣1.027E-02
␣␣1.060E+00␣␣1.070E-02␣␣8.823E-01␣␣1.060E-02␣␣1.228E-02␣␣8.582E-01␣␣1.019E-02
␣␣9.045E-01␣␣1.058E-02␣␣7.653E-01␣␣1.637E-02␣␣1.944E-02␣␣7.427E-01␣␣1.445E-02
␣␣7.841E-01␣␣1.546E-02␣␣6.712E-01␣␣1.560E-02␣␣1.852E-02␣␣6.493E-01␣␣1.460E-02
␣␣6.877E-01␣␣1.666E-02␣␣5.933E-01␣␣1.546E-02␣␣1.767E-02␣␣5.720E-01␣␣1.580E-02
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␣␣4.159E-01␣␣1.371E-02␣␣3.337E-01␣␣1.153E-02␣␣1.290E-02␣␣3.097E-01␣␣1.248E-02
␣␣3.151E-01␣␣1.292E-02␣␣2.578E-01␣␣1.275E-02␣␣1.390E-02␣␣2.462E-01␣␣1.532E-02
␣␣2.384E-01␣␣1.557E-02␣␣1.949E-01␣␣1.295E-02␣␣1.394E-02␣␣2.016E-01␣␣1.660E-02
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␣␣8.569E-02␣␣8.569E-02␣␣7.051E-02␣␣7.051E-02␣␣7.229E-02␣␣6.212E-02␣␣6.212E-02
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␣␣1.511E-02␣␣1.511E-02␣␣1.080E-02␣␣1.080E-02␣␣1.167E-02␣␣1.663E-02␣␣1.663E-02
␣␣1.477E+01␣␣1.151E-02␣␣7.306E+00␣␣1.080E-02␣␣9.814E-03␣␣6.317E+00␣␣7.098E-03
␣␣7.550E+00␣␣1.266E-02␣␣3.847E+00␣␣1.053E-02␣␣8.957E-03␣␣3.573E+00␣␣6.396E-03
␣␣3.966E+00␣␣1.144E-02␣␣2.695E+00␣␣9.361E-03␣␣7.679E-03␣␣2.558E+00␣␣8.256E-03
␣␣2.784E+00␣␣1.053E-02␣␣2.122E+00␣␣8.138E-03␣␣7.825E-03␣␣2.034E+00␣␣9.316E-03

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␣1.839E+00␣7.483E-03␣1.542E+00␣9.362E-03␣1.094E-02␣1.497E+00␣7.528E-03
␣1.595E+00␣5.815E-03␣1.369E+00␣1.104E-02␣1.172E-02␣1.333E+00␣7.752E-03
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␣1.477E+01␣1.151E-02␣7.306E+00␣1.080E-02␣9.814E-03␣6.317E+00␣7.098E-03
␣7.550E+00␣1.266E-02␣3.847E+00␣1.053E-02␣8.957E-03␣3.573E+00␣6.396E-03
␣3.966E+00␣1.144E-02␣2.695E+00␣9.361E-03␣7.679E-03␣2.558E+00␣8.256E-03
␣2.784E+00␣1.053E-02␣2.122E+00␣8.138E-03␣7.825E-03␣2.034E+00␣9.316E-03
␣2.196E+00␣9.607E-03␣1.776E+00␣7.990E-03␣9.219E-03␣1.716E+00␣8.707E-03
␣1.839E+00␣7.483E-03␣1.542E+00␣9.362E-03␣1.094E-02␣1.497E+00␣7.528E-03
␣1.595E+00␣5.815E-03␣1.369E+00␣1.104E-02␣1.172E-02␣1.333E+00␣7.752E-03
␣1.414E+00␣6.701E-03␣1.234E+00␣1.150E-02␣1.137E-02␣1.204E+00␣9.290E-03
␣1.273E+00␣9.266E-03␣1.031E+00␣1.083E-02␣1.112E-02␣1.006E+00␣1.027E-02
␣1.060E+00␣1.070E-02␣8.823E-01␣1.060E-02␣1.228E-02␣8.582E-01␣1.019E-02
␣9.045E-01␣1.058E-02␣7.653E-01␣1.637E-02␣1.944E-02␣7.427E-01␣1.445E-02
␣7.841E-01␣1.546E-02␣6.712E-01␣1.560E-02␣1.852E-02␣6.493E-01␣1.460E-02
␣6.877E-01␣1.666E-02␣5.933E-01␣1.546E-02␣1.767E-02␣5.720E-01␣1.580E-02
␣6.082E-01␣1.881E-02␣5.289E-01␣1.364E-02␣1.528E-02␣5.063E-01␣1.450E-02
␣5.380E-01␣1.723E-02␣4.228E-01␣1.174E-02␣1.320E-02␣3.966E-01␣1.226E-02
␣4.159E-01␣1.371E-02␣3.337E-01␣1.153E-02␣1.290E-02␣3.097E-01␣1.248E-02
␣3.151E-01␣1.292E-02␣2.578E-01␣1.275E-02␣1.390E-02␣2.462E-01␣1.532E-02

␣2.384E-01␣1.557E-02␣1.949E-01␣1.295E-02␣1.394E-02␣2.016E-01␣1.660E-02
␣1.941E-01␣1.692E-02␣1.525E-01␣1.525E-01␣1.442E-01␣1.687E-01␣1.687E-01
␣1.656E-01␣1.656E-01␣1.250E-01␣1.250E-01␣1.158E-01␣1.361E-01␣1.361E-01
␣1.402E-01␣1.402E-01␣1.055E-01␣1.055E-01␣9.945E-02␣1.037E-01␣1.037E-01
␣1.132E-01␣1.132E-01␣8.840E-02␣8.840E-02␣8.643E-02␣7.814E-02␣7.814E-02
␣8.569E-02␣8.569E-02␣7.051E-02␣7.051E-02␣7.229E-02␣6.212E-02␣6.212E-02
␣6.139E-02␣6.139E-02␣5.244E-02␣5.244E-02␣5.733E-02␣5.357E-02␣5.357E-02
␣4.244E-02␣4.244E-02␣3.170E-02␣3.170E-02␣3.866E-02␣4.677E-02␣4.677E-02
␣2.540E-02␣2.540E-02␣2.223E-02␣2.223E-02␣2.627E-02␣3.925E-02␣3.925E-02
␣1.812E-02␣1.812E-02␣1.729E-02␣1.729E-02␣1.733E-02␣2.928E-02␣2.928E-02
␣1.494E-02␣1.494E-02␣1.246E-02␣1.246E-02␣1.224E-02␣2.139E-02␣2.139E-02
␣1.511E-02␣1.511E-02␣1.080E-02␣1.080E-02␣1.167E-02␣1.663E-02␣1.663E-02
␣1.477E+01␣1.151E-02␣7.306E+00␣1.080E-02␣9.814E-03␣6.317E+00␣7.098E-03
␣7.550E+00␣1.266E-02␣3.847E+00␣1.053E-02␣8.957E-03␣3.573E+00␣6.396E-03
␣3.966E+00␣1.144E-02␣2.695E+00␣9.361E-03␣7.679E-03␣2.558E+00␣8.256E-03
␣2.784E+00␣1.053E-02␣2.122E+00␣8.138E-03␣7.825E-03␣2.034E+00␣9.316E-03
␣2.196E+00␣9.607E-03␣1.776E+00␣7.990E-03␣9.219E-03␣1.716E+00␣8.707E-03
␣1.839E+00␣7.483E-03␣1.542E+00␣9.362E-03␣1.094E-02␣1.497E+00␣7.528E-03
␣1.595E+00␣5.815E-03␣1.369E+00␣1.104E-02␣1.172E-02␣1.333E+00␣7.752E-03
␣1.414E+00␣6.701E-03␣1.234E+00␣1.150E-02␣1.137E-02␣1.204E+00␣9.290E-03
␣1.273E+00␣9.266E-03␣1.031E+00␣1.083E-02␣1.112E-02␣1.006E+00␣1.027E-02
␣1.060E+00␣1.070E-02␣8.823E-01␣1.060E-02␣1.228E-02␣8.582E-01␣1.019E-02
␣9.045E-01␣1.058E-02␣7.653E-01␣1.637E-02␣1.944E-02␣7.427E-01␣1.445E-02
␣7.841E-01␣1.546E-02␣6.712E-01␣1.560E-02␣1.852E-02␣6.493E-01␣1.460E-02
␣6.877E-01␣1.666E-02␣5.933E-01␣1.546E-02␣1.767E-02␣5.720E-01␣1.580E-02
␣6.082E-01␣1.881E-02␣5.289E-01␣1.364E-02␣1.528E-02␣5.063E-01␣1.450E-02
␣5.380E-01␣1.723E-02␣4.228E-01␣1.174E-02␣1.320E-02␣3.966E-01␣1.226E-02
␣4.159E-01␣1.371E-02␣3.337E-01␣1.153E-02␣1.290E-02␣3.097E-01␣1.248E-02
␣3.151E-01␣1.292E-02␣2.578E-01␣1.275E-02␣1.390E-02␣2.462E-01␣1.532E-02
␣2.384E-01␣1.557E-02␣1.949E-01␣1.295E-02␣1.394E-02␣2.016E-01␣1.660E-02
␣1.941E-01␣1.692E-02␣1.525E-01␣1.525E-01␣1.442E-01␣1.687E-01␣1.687E-01
␣1.656E-01␣1.656E-01␣1.250E-01␣1.250E-01␣1.158E-01␣1.361E-01␣1.361E-01
␣1.402E-01␣1.402E-01␣1.055E-01␣1.055E-01␣9.945E-02␣1.037E-01␣1.037E-01
␣1.132E-01␣1.132E-01␣8.840E-02␣8.840E-02␣8.643E-02␣7.814E-02␣7.814E-02
␣8.569E-02␣8.569E-02␣7.051E-02␣7.051E-02␣7.229E-02␣6.212E-02␣6.212E-02
␣6.139E-02␣6.139E-02␣5.244E-02␣5.244E-02␣5.733E-02␣5.357E-02␣5.357E-02
␣4.244E-02␣4.244E-02␣3.170E-02␣3.170E-02␣3.866E-02␣4.677E-02␣4.677E-02
␣2.540E-02␣2.540E-02␣2.223E-02␣2.223E-02␣2.627E-02␣3.925E-02␣3.925E-02
␣1.812E-02␣1.812E-02␣1.729E-02␣1.729E-02␣1.733E-02␣2.928E-02␣2.928E-02
␣1.494E-02␣1.494E-02␣1.246E-02␣1.246E-02␣1.224E-02␣2.139E-02␣2.139E-02
␣1.511E-02␣1.511E-02␣1.080E-02␣1.080E-02␣1.167E-02␣1.663E-02␣1.663E-02
␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣1.1␣␣␣␣␣0.005␣␣␣␣␣␣0.01RM␣11dec05MGA␣␣␣T

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FFF␣0␣␣␣␣0␣390.00000␣␣␣␣g␣1.14␣␣␣a␣0.24␣01␣F␣T␣F␣F
DATA/Filter/ASTER_vnir.flt
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␣␣␣␣7␣␣␣␣0␣␣␣␣0␣␣␣␣0
␣1.000E+00Boundary␣Layer
␣0.340␣1.4745␣0.0796␣0.738␣0.360␣1.3436␣0.0723␣0.733␣0.400␣1.2930␣0.0683␣0.726
␣0.500␣1.1201␣0.0576␣0.720␣0.675␣0.8299␣0.0431␣0.704␣0.870␣0.6472␣0.0333␣0.675
␣1.020␣0.5524␣0.0288␣0.691
␣␣␣705.000␣␣␣␣␣␣.000␣␣␣180.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣0
␣␣␣12␣␣␣␣1␣␣220␣␣␣␣0
-132.95144␣␣25.57412␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000
␣␣␣29␣␣␣␣7
␣␣␣␣␣␣␣0.0␣␣␣␣␣␣␣0.2␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣0.6␣␣␣␣␣␣␣0.8␣␣␣␣␣␣␣1.0␣␣␣␣␣␣␣1.5␣␣␣␣␣␣␣␣␣2
␣␣␣␣␣␣␣␣␣3␣␣␣␣␣␣␣␣4␣␣␣␣␣␣␣␣␣5␣␣␣␣␣␣␣␣10␣␣␣␣␣␣␣␣20␣␣␣␣␣␣␣␣30␣␣␣␣␣␣␣␣40␣␣␣␣␣␣␣␣50
␣␣␣␣␣␣␣␣60␣␣␣␣␣␣␣␣70␣␣␣␣␣␣␣␣80␣␣␣␣␣␣␣␣90␣␣␣␣␣␣␣100␣␣␣␣␣␣␣␣110␣␣␣␣␣␣␣␣120␣␣␣␣␣␣␣␣130
␣␣␣␣␣␣␣140␣␣␣␣␣␣␣␣150␣␣␣␣␣␣␣␣160␣␣␣␣␣␣␣␣170␣␣␣␣␣␣␣␣180
␣␣␣␣␣␣0.340␣␣␣␣␣␣0.380␣␣␣␣␣␣0.400␣␣␣␣␣␣0.500␣␣␣␣␣␣0.675␣␣␣␣␣␣0.870␣␣␣␣␣␣1.020
␣1.034E+01␣1.200E-02␣5.535E+00␣1.128E-02␣1.024E-02␣4.812E+00␣7.301E-03
␣5.751E+00␣1.306E-02␣3.205E+00␣1.094E-02␣9.362E-03␣2.965E+00␣6.615E-03
␣3.325E+00␣1.190E-02␣2.367E+00␣9.747E-03␣8.121E-03␣2.231E+00␣8.352E-03
␣2.458E+00␣1.088E-02␣1.929E+00␣8.568E-03␣8.262E-03␣1.835E+00␣9.349E-03
␣2.006E+00␣9.872E-03␣1.654E+00␣8.408E-03␣9.594E-03␣1.583E+00␣8.826E-03
␣1.720E+00␣7.784E-03␣1.461E+00␣9.680E-03␣1.126E-02␣1.404E+00␣7.774E-03
␣1.517E+00␣6.169E-03␣1.315E+00␣1.125E-02␣1.204E-02␣1.266E+00␣7.984E-03
␣1.364E+00␣6.957E-03␣1.198E+00␣1.170E-02␣1.176E-02␣1.155E+00␣9.392E-03
␣1.240E+00␣9.344E-03␣1.018E+00␣1.109E-02␣1.156E-02␣9.803E-01␣1.032E-02
␣1.049E+00␣1.072E-02␣8.798E-01␣1.085E-02␣1.264E-02␣8.460E-01␣1.031E-02
␣9.044E-01␣1.067E-02␣7.694E-01␣1.570E-02␣1.881E-02␣7.381E-01␣1.386E-02
␣7.899E-01␣1.482E-02␣6.785E-01␣1.517E-02␣1.820E-02␣6.494E-01␣1.417E-02
␣6.964E-01␣1.610E-02␣6.023E-01␣1.505E-02␣1.744E-02␣5.746E-01␣1.527E-02
␣6.178E-01␣1.809E-02␣5.380E-01␣1.341E-02␣1.528E-02␣5.105E-01␣1.415E-02
␣5.480E-01␣1.667E-02␣4.310E-01␣1.172E-02␣1.340E-02␣4.025E-01␣1.223E-02
␣4.259E-01␣1.352E-02␣3.412E-01␣1.161E-02␣1.317E-02␣3.165E-01␣1.253E-02
␣3.247E-01␣1.289E-02␣2.646E-01␣1.280E-02␣1.416E-02␣2.529E-01␣1.515E-02
␣2.478E-01␣1.538E-02␣2.016E-01␣1.306E-02␣1.427E-02␣2.073E-01␣1.637E-02
␣2.014E-01␣1.669E-02␣1.583E-01␣1.583E-01␣1.499E-01␣1.729E-01␣1.729E-01
␣1.708E-01␣1.708E-01␣1.295E-01␣1.295E-01␣1.205E-01␣1.396E-01␣1.396E-01
␣1.436E-01␣1.436E-01␣1.087E-01␣1.087E-01␣1.030E-01␣1.072E-01␣1.072E-01

␣1.155E-01␣1.155E-01␣9.053E-02␣9.053E-02␣8.899E-02␣8.171E-02␣8.171E-02
␣8.730E-02␣8.730E-02␣7.192E-02␣7.192E-02␣7.420E-02␣6.542E-02␣6.542E-02
␣6.251E-02␣6.251E-02␣5.350E-02␣5.350E-02␣5.887E-02␣5.639E-02␣5.639E-02
␣4.322E-02␣4.322E-02␣3.245E-02␣3.245E-02␣3.972E-02␣4.881E-02␣4.881E-02
␣2.578E-02␣2.578E-02␣2.257E-02␣2.257E-02␣2.689E-02␣4.081E-02␣4.081E-02
␣1.832E-02␣1.832E-02␣1.744E-02␣1.744E-02␣1.776E-02␣3.061E-02␣3.061E-02
␣1.525E-02␣1.525E-02␣1.275E-02␣1.275E-02␣1.264E-02␣2.240E-02␣2.240E-02
␣1.540E-02␣1.540E-02␣1.116E-02␣1.116E-02␣1.198E-02␣1.724E-02␣1.724E-02
␣1.034E+01␣1.200E-02␣5.535E+00␣1.128E-02␣1.024E-02␣4.812E+00␣7.301E-03
␣5.751E+00␣1.306E-02␣3.205E+00␣1.094E-02␣9.362E-03␣2.965E+00␣6.615E-03
␣3.325E+00␣1.190E-02␣2.367E+00␣9.747E-03␣8.121E-03␣2.231E+00␣8.352E-03
␣2.458E+00␣1.088E-02␣1.929E+00␣8.568E-03␣8.262E-03␣1.835E+00␣9.349E-03
␣2.006E+00␣9.872E-03␣1.654E+00␣8.408E-03␣9.594E-03␣1.583E+00␣8.826E-03
␣1.720E+00␣7.784E-03␣1.461E+00␣9.680E-03␣1.126E-02␣1.404E+00␣7.774E-03
␣1.517E+00␣6.169E-03␣1.315E+00␣1.125E-02␣1.204E-02␣1.266E+00␣7.984E-03
␣1.364E+00␣6.957E-03␣1.198E+00␣1.170E-02␣1.176E-02␣1.155E+00␣9.392E-03
␣1.240E+00␣9.344E-03␣1.018E+00␣1.109E-02␣1.156E-02␣9.803E-01␣1.032E-02
␣1.049E+00␣1.072E-02␣8.798E-01␣1.085E-02␣1.264E-02␣8.460E-01␣1.031E-02
␣9.044E-01␣1.067E-02␣7.694E-01␣1.570E-02␣1.881E-02␣7.381E-01␣1.386E-02
␣7.899E-01␣1.482E-02␣6.785E-01␣1.517E-02␣1.820E-02␣6.494E-01␣1.417E-02
␣6.964E-01␣1.610E-02␣6.023E-01␣1.505E-02␣1.744E-02␣5.746E-01␣1.527E-02
␣6.178E-01␣1.809E-02␣5.380E-01␣1.341E-02␣1.528E-02␣5.105E-01␣1.415E-02
␣5.480E-01␣1.667E-02␣4.310E-01␣1.172E-02␣1.340E-02␣4.025E-01␣1.223E-02
␣4.259E-01␣1.352E-02␣3.412E-01␣1.161E-02␣1.317E-02␣3.165E-01␣1.253E-02
␣3.247E-01␣1.289E-02␣2.646E-01␣1.280E-02␣1.416E-02␣2.529E-01␣1.515E-02
␣2.478E-01␣1.538E-02␣2.016E-01␣1.306E-02␣1.427E-02␣2.073E-01␣1.637E-02
␣2.014E-01␣1.669E-02␣1.583E-01␣1.583E-01␣1.499E-01␣1.729E-01␣1.729E-01
␣1.708E-01␣1.708E-01␣1.295E-01␣1.295E-01␣1.205E-01␣1.396E-01␣1.396E-01
␣1.436E-01␣1.436E-01␣1.087E-01␣1.087E-01␣1.030E-01␣1.072E-01␣1.072E-01
␣1.155E-01␣1.155E-01␣9.053E-02␣9.053E-02␣8.899E-02␣8.171E-02␣8.171E-02
␣8.730E-02␣8.730E-02␣7.192E-02␣7.192E-02␣7.420E-02␣6.542E-02␣6.542E-02
␣6.251E-02␣6.251E-02␣5.350E-02␣5.350E-02␣5.887E-02␣5.639E-02␣5.639E-02
␣4.322E-02␣4.322E-02␣3.245E-02␣3.245E-02␣3.972E-02␣4.881E-02␣4.881E-02
␣2.578E-02␣2.578E-02␣2.257E-02␣2.257E-02␣2.689E-02␣4.081E-02␣4.081E-02
␣1.832E-02␣1.832E-02␣1.744E-02␣1.744E-02␣1.776E-02␣3.061E-02␣3.061E-02
␣1.525E-02␣1.525E-02␣1.275E-02␣1.275E-02␣1.264E-02␣2.240E-02␣2.240E-02
␣1.540E-02␣1.540E-02␣1.116E-02␣1.116E-02␣1.198E-02␣1.724E-02␣1.724E-02
␣1.034E+01␣1.200E-02␣5.535E+00␣1.128E-02␣1.024E-02␣4.812E+00␣7.301E-03
␣5.751E+00␣1.306E-02␣3.205E+00␣1.094E-02␣9.362E-03␣2.965E+00␣6.615E-03
␣3.325E+00␣1.190E-02␣2.367E+00␣9.747E-03␣8.121E-03␣2.231E+00␣8.352E-03
␣2.458E+00␣1.088E-02␣1.929E+00␣8.568E-03␣8.262E-03␣1.835E+00␣9.349E-03
␣2.006E+00␣9.872E-03␣1.654E+00␣8.408E-03␣9.594E-03␣1.583E+00␣8.826E-03

␣1.720E+00␣7.784E-03␣1.461E+00␣9.680E-03␣1.126E-02␣1.404E+00␣7.774E-03
␣1.517E+00␣6.169E-03␣1.315E+00␣1.125E-02␣1.204E-02␣1.266E+00␣7.984E-03
␣1.364E+00␣6.957E-03␣1.198E+00␣1.170E-02␣1.176E-02␣1.155E+00␣9.392E-03
␣1.240E+00␣9.344E-03␣1.018E+00␣1.109E-02␣1.156E-02␣9.803E-01␣1.032E-02
␣1.049E+00␣1.072E-02␣8.798E-01␣1.085E-02␣1.264E-02␣8.460E-01␣1.031E-02
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␣6.964E-01␣1.610E-02␣6.023E-01␣1.505E-02␣1.744E-02␣5.746E-01␣1.527E-02
␣6.178E-01␣1.809E-02␣5.380E-01␣1.341E-02␣1.528E-02␣5.105E-01␣1.415E-02
␣5.480E-01␣1.667E-02␣4.310E-01␣1.172E-02␣1.340E-02␣4.025E-01␣1.223E-02
␣4.259E-01␣1.352E-02␣3.412E-01␣1.161E-02␣1.317E-02␣3.165E-01␣1.253E-02
␣3.247E-01␣1.289E-02␣2.646E-01␣1.280E-02␣1.416E-02␣2.529E-01␣1.515E-02
␣2.478E-01␣1.538E-02␣2.016E-01␣1.306E-02␣1.427E-02␣2.073E-01␣1.637E-02
␣2.014E-01␣1.669E-02␣1.583E-01␣1.583E-01␣1.499E-01␣1.729E-01␣1.729E-01
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␣1.436E-01␣1.436E-01␣1.087E-01␣1.087E-01␣1.030E-01␣1.072E-01␣1.072E-01
␣1.155E-01␣1.155E-01␣9.053E-02␣9.053E-02␣8.899E-02␣8.171E-02␣8.171E-02
␣8.730E-02␣8.730E-02␣7.192E-02␣7.192E-02␣7.420E-02␣6.542E-02␣6.542E-02
␣6.251E-02␣6.251E-02␣5.350E-02␣5.350E-02␣5.887E-02␣5.639E-02␣5.639E-02
␣4.322E-02␣4.322E-02␣3.245E-02␣3.245E-02␣3.972E-02␣4.881E-02␣4.881E-02
␣2.578E-02␣2.578E-02␣2.257E-02␣2.257E-02␣2.689E-02␣4.081E-02␣4.081E-02
␣1.832E-02␣1.832E-02␣1.744E-02␣1.744E-02␣1.776E-02␣3.061E-02␣3.061E-02
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␣1.540E-02␣1.540E-02␣1.116E-02␣1.116E-02␣1.198E-02␣1.724E-02␣1.724E-02
␣1.034E+01␣1.200E-02␣5.535E+00␣1.128E-02␣1.024E-02␣4.812E+00␣7.301E-03
␣5.751E+00␣1.306E-02␣3.205E+00␣1.094E-02␣9.362E-03␣2.965E+00␣6.615E-03
␣3.325E+00␣1.190E-02␣2.367E+00␣9.747E-03␣8.121E-03␣2.231E+00␣8.352E-03
␣2.458E+00␣1.088E-02␣1.929E+00␣8.568E-03␣8.262E-03␣1.835E+00␣9.349E-03
␣2.006E+00␣9.872E-03␣1.654E+00␣8.408E-03␣9.594E-03␣1.583E+00␣8.826E-03
␣1.720E+00␣7.784E-03␣1.461E+00␣9.680E-03␣1.126E-02␣1.404E+00␣7.774E-03
␣1.517E+00␣6.169E-03␣1.315E+00␣1.125E-02␣1.204E-02␣1.266E+00␣7.984E-03
␣1.364E+00␣6.957E-03␣1.198E+00␣1.170E-02␣1.176E-02␣1.155E+00␣9.392E-03
␣1.240E+00␣9.344E-03␣1.018E+00␣1.109E-02␣1.156E-02␣9.803E-01␣1.032E-02
␣1.049E+00␣1.072E-02␣8.798E-01␣1.085E-02␣1.264E-02␣8.460E-01␣1.031E-02
␣9.044E-01␣1.067E-02␣7.694E-01␣1.570E-02␣1.881E-02␣7.381E-01␣1.386E-02
␣7.899E-01␣1.482E-02␣6.785E-01␣1.517E-02␣1.820E-02␣6.494E-01␣1.417E-02
␣6.964E-01␣1.610E-02␣6.023E-01␣1.505E-02␣1.744E-02␣5.746E-01␣1.527E-02
␣6.178E-01␣1.809E-02␣5.380E-01␣1.341E-02␣1.528E-02␣5.105E-01␣1.415E-02
␣5.480E-01␣1.667E-02␣4.310E-01␣1.172E-02␣1.340E-02␣4.025E-01␣1.223E-02
␣4.259E-01␣1.352E-02␣3.412E-01␣1.161E-02␣1.317E-02␣3.165E-01␣1.253E-02
␣3.247E-01␣1.289E-02␣2.646E-01␣1.280E-02␣1.416E-02␣2.529E-01␣1.515E-02
␣2.478E-01␣1.538E-02␣2.016E-01␣1.306E-02␣1.427E-02␣2.073E-01␣1.637E-02

␣2.014E-01␣1.669E-02␣1.583E-01␣1.583E-01␣1.499E-01␣1.729E-01␣1.729E-01
␣1.708E-01␣1.708E-01␣1.295E-01␣1.295E-01␣1.205E-01␣1.396E-01␣1.396E-01
␣1.436E-01␣1.436E-01␣1.087E-01␣1.087E-01␣1.030E-01␣1.072E-01␣1.072E-01
␣1.155E-01␣1.155E-01␣9.053E-02␣9.053E-02␣8.899E-02␣8.171E-02␣8.171E-02
␣8.730E-02␣8.730E-02␣7.192E-02␣7.192E-02␣7.420E-02␣6.542E-02␣6.542E-02
␣6.251E-02␣6.251E-02␣5.350E-02␣5.350E-02␣5.887E-02␣5.639E-02␣5.639E-02
␣4.322E-02␣4.322E-02␣3.245E-02␣3.245E-02␣3.972E-02␣4.881E-02␣4.881E-02
␣2.578E-02␣2.578E-02␣2.257E-02␣2.257E-02␣2.689E-02␣4.081E-02␣4.081E-02
␣1.832E-02␣1.832E-02␣1.744E-02␣1.744E-02␣1.776E-02␣3.061E-02␣3.061E-02
␣1.525E-02␣1.525E-02␣1.275E-02␣1.275E-02␣1.264E-02␣2.240E-02␣2.240E-02
␣1.540E-02␣1.540E-02␣1.116E-02␣1.116E-02␣1.198E-02␣1.724E-02␣1.724E-02
␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣1.1␣␣␣␣␣0.005␣␣␣␣␣␣␣0.01RM␣08aug06MGA␣␣␣T
␣␣␣␣0

11/28/2006

C␣␣␣2␣␣␣␣3␣␣␣␣2␣␣␣-1␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣306.25␣␣␣␣-4
FFF␣0␣␣␣␣0␣390.00000␣␣␣␣g␣0.26␣␣␣a␣0.27␣01␣F␣T␣F␣F
DATA/Filter/ASTER_vnir.flt
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␣␣␣␣7␣␣␣␣0␣␣␣␣0␣␣␣␣0
␣1.000E+00Boundary␣Layer
␣0.340␣1.5205␣0.0761␣0.735␣0.360␣1.3775␣0.0690␣0.730␣0.400␣1.3198␣0.0649␣0.722
␣0.500␣1.1285␣0.0544␣0.716␣0.675␣0.8155␣0.0402␣0.698␣0.870␣0.6236␣0.0308␣0.666
␣1.020␣0.5246␣0.0265␣0.682
␣␣␣705.000␣␣␣␣␣␣.000␣␣␣180.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣0
␣␣␣12␣␣␣␣1␣␣332␣␣␣␣0
-163.72906␣␣58.23772␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000
␣␣␣29␣␣␣␣7
␣␣␣␣␣␣␣0.0␣␣␣␣␣␣␣0.2␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣0.6␣␣␣␣␣␣␣0.8␣␣␣␣␣␣␣1.0␣␣␣␣␣␣␣1.5␣␣␣␣␣␣␣␣2
␣␣␣␣␣␣␣␣3␣␣␣␣␣␣␣␣4␣␣␣␣␣␣␣␣5␣␣␣␣␣␣␣10␣␣␣␣␣␣␣20␣␣␣␣␣␣␣30␣␣␣␣␣␣␣40␣␣␣␣␣␣␣50
␣␣␣␣␣␣␣60␣␣␣␣␣␣␣70␣␣␣␣␣␣␣80␣␣␣␣␣␣␣90␣␣␣␣␣␣100␣␣␣␣␣␣110␣␣␣␣␣␣120␣␣␣␣␣␣130
␣␣␣␣␣␣␣140␣␣␣␣␣␣␣150␣␣␣␣␣␣␣160␣␣␣␣␣␣␣170␣␣␣␣␣␣␣180
␣␣␣␣␣0.340␣␣␣␣␣0.380␣␣␣␣␣0.400␣␣␣␣␣0.500␣␣␣␣␣0.675␣␣␣␣␣0.870␣␣␣␣␣1.020
␣8.085E+00␣1.233E-02␣4.585E+00␣1.160E-02␣1.053E-02␣3.998E+00␣7.445E-03
␣4.782E+00␣1.333E-02␣2.833E+00␣1.122E-02␣9.640E-03␣2.611E+00␣6.766E-03
␣2.951E+00␣1.219E-02␣2.167E+00␣1.002E-02␣8.431E-03␣2.031E+00␣8.405E-03
␣2.260E+00␣1.111E-02␣1.806E+00␣8.866E-03␣8.566E-03␣1.707E+00␣9.355E-03
␣1.885E+00␣1.005E-02␣1.574E+00␣8.697E-03␣9.848E-03␣1.495E+00␣8.893E-03
␣1.640E+00␣7.992E-03␣1.406E+00␣9.892E-03␣1.145E-02␣1.341E+00␣7.934E-03
␣1.465E+00␣6.417E-03␣1.276E+00␣1.138E-02␣1.224E-02␣1.220E+00␣8.136E-03
␣1.327E+00␣7.134E-03␣1.171E+00␣1.181E-02␣1.203E-02␣1.120E+00␣9.454E-03
␣1.215E+00␣9.383E-03␣1.005E+00␣1.124E-02␣1.186E-02␣9.603E-01␣1.035E-02

␣1.038E+00␣1.071E-02␣8.756E-01␣1.100E-02␣1.288E-02␣8.350E-01␣1.039E-02
␣9.019E-01␣1.071E-02␣7.700E-01␣1.527E-02␣1.842E-02␣7.327E-01␣1.350E-02
␣7.918E-01␣1.440E-02␣6.817E-01␣1.487E-02␣1.797E-02␣6.473E-01␣1.389E-02
␣7.005E-01␣1.570E-02␣6.069E-01␣1.477E-02␣1.729E-02␣5.748E-01␣1.492E-02
␣6.229E-01␣1.757E-02␣5.430E-01␣1.327E-02␣1.528E-02␣5.120E-01␣1.393E-02
␣5.535E-01␣1.628E-02␣4.359E-01␣1.172E-02␣1.354E-02␣4.057E-01␣1.222E-02
␣4.320E-01␣1.340E-02␣3.458E-01␣1.167E-02␣1.337E-02␣3.206E-01␣1.256E-02
␣3.309E-01␣1.286E-02␣2.690E-01␣1.282E-02␣1.434E-02␣2.571E-01␣1.503E-02
␣2.540E-01␣1.524E-02␣2.061E-01␣1.312E-02␣1.449E-02␣2.110E-01␣1.620E-02
␣2.064E-01␣1.650E-02␣1.623E-01␣1.623E-01␣1.538E-01␣1.757E-01␣1.757E-01
␣1.742E-01␣1.742E-01␣1.326E-01␣1.326E-01␣1.238E-01␣1.419E-01␣1.419E-01
␣1.459E-01␣1.459E-01␣1.109E-01␣1.109E-01␣1.054E-01␣1.097E-01␣1.097E-01
␣1.169E-01␣1.169E-01␣9.190E-02␣9.190E-02␣9.069E-02␣8.425E-02␣8.425E-02
␣8.829E-02␣8.829E-02␣7.281E-02␣7.281E-02␣7.545E-02␣6.778E-02␣6.778E-02
␣6.321E-02␣6.321E-02␣5.418E-02␣5.418E-02␣5.985E-02␣5.839E-02␣5.839E-02
␣4.372E-02␣4.372E-02␣3.295E-02␣3.295E-02␣4.040E-02␣5.024E-02␣5.024E-02
␣2.604E-02␣2.604E-02␣2.278E-02␣2.278E-02␣2.729E-02␣4.186E-02␣4.186E-02
␣1.846E-02␣1.846E-02␣1.753E-02␣1.753E-02␣1.806E-02␣3.150E-02␣3.150E-02
␣1.545E-02␣1.545E-02␣1.295E-02␣1.295E-02␣1.292E-02␣2.309E-02␣2.309E-02
␣1.559E-02␣1.559E-02␣1.142E-02␣1.142E-02␣1.220E-02␣1.766E-02␣1.766E-02
␣8.085E+00␣1.233E-02␣4.585E+00␣1.160E-02␣1.053E-02␣3.998E+00␣7.445E-03
␣4.782E+00␣1.333E-02␣2.833E+00␣1.122E-02␣9.640E-03␣2.611E+00␣6.766E-03
␣2.951E+00␣1.219E-02␣2.167E+00␣1.002E-02␣8.431E-03␣2.031E+00␣8.405E-03
␣2.260E+00␣1.111E-02␣1.806E+00␣8.866E-03␣8.566E-03␣1.707E+00␣9.355E-03
␣1.885E+00␣1.005E-02␣1.574E+00␣8.697E-03␣9.848E-03␣1.495E+00␣8.893E-03
␣1.640E+00␣7.992E-03␣1.406E+00␣9.892E-03␣1.145E-02␣1.341E+00␣7.934E-03
␣1.465E+00␣6.417E-03␣1.276E+00␣1.138E-02␣1.224E-02␣1.220E+00␣8.136E-03
␣1.327E+00␣7.134E-03␣1.171E+00␣1.181E-02␣1.203E-02␣1.120E+00␣9.454E-03
␣1.215E+00␣9.383E-03␣1.005E+00␣1.124E-02␣1.186E-02␣9.603E-01␣1.035E-02
␣1.038E+00␣1.071E-02␣8.756E-01␣1.100E-02␣1.288E-02␣8.350E-01␣1.039E-02
␣9.019E-01␣1.071E-02␣7.700E-01␣1.527E-02␣1.842E-02␣7.327E-01␣1.350E-02
␣7.918E-01␣1.440E-02␣6.817E-01␣1.487E-02␣1.797E-02␣6.473E-01␣1.389E-02
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␣8.829E-02␣8.829E-02␣7.281E-02␣7.281E-02␣7.545E-02␣6.778E-02␣6.778E-02
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␣1.846E-02␣1.846E-02␣1.753E-02␣1.753E-02␣1.806E-02␣3.150E-02␣3.150E-02
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␣1.559E-02␣1.559E-02␣1.142E-02␣1.142E-02␣1.220E-02␣1.766E-02␣1.766E-02
␣8.085E+00␣1.233E-02␣4.585E+00␣1.160E-02␣1.053E-02␣3.998E+00␣7.445E-03
␣4.782E+00␣1.333E-02␣2.833E+00␣1.122E-02␣9.640E-03␣2.611E+00␣6.766E-03
␣2.951E+00␣1.219E-02␣2.167E+00␣1.002E-02␣8.431E-03␣2.031E+00␣8.405E-03
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␣1.465E+00␣6.417E-03␣1.276E+00␣1.138E-02␣1.224E-02␣1.220E+00␣8.136E-03
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␣1.215E+00␣9.383E-03␣1.005E+00␣1.124E-02␣1.186E-02␣9.603E-01␣1.035E-02
␣1.038E+00␣1.071E-02␣8.756E-01␣1.100E-02␣1.288E-02␣8.350E-01␣1.039E-02
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␣2.540E-01␣1.524E-02␣2.061E-01␣1.312E-02␣1.449E-02␣2.110E-01␣1.620E-02
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␣1.559E-02␣1.559E-02␣1.142E-02␣1.142E-02␣1.220E-02␣1.766E-02␣1.766E-02
␣8.085E+00␣1.233E-02␣4.585E+00␣1.160E-02␣1.053E-02␣3.998E+00␣7.445E-03
␣4.782E+00␣1.333E-02␣2.833E+00␣1.122E-02␣9.640E-03␣2.611E+00␣6.766E-03
␣2.951E+00␣1.219E-02␣2.167E+00␣1.002E-02␣8.431E-03␣2.031E+00␣8.405E-03
␣2.260E+00␣1.111E-02␣1.806E+00␣8.866E-03␣8.566E-03␣1.707E+00␣9.355E-03
␣1.885E+00␣1.005E-02␣1.574E+00␣8.697E-03␣9.848E-03␣1.495E+00␣8.893E-03
␣1.640E+00␣7.992E-03␣1.406E+00␣9.892E-03␣1.145E-02␣1.341E+00␣7.934E-03

␣1.465E+00␣6.417E-03␣1.276E+00␣1.138E-02␣1.224E-02␣1.220E+00␣8.136E-03
␣1.327E+00␣7.134E-03␣1.171E+00␣1.181E-02␣1.203E-02␣1.120E+00␣9.454E-03
␣1.215E+00␣9.383E-03␣1.005E+00␣1.124E-02␣1.186E-02␣9.603E-01␣1.035E-02
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␣9.019E-01␣1.071E-02␣7.700E-01␣1.527E-02␣1.842E-02␣7.327E-01␣1.350E-02
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␣4.320E-01␣1.340E-02␣3.458E-01␣1.167E-02␣1.337E-02␣3.206E-01␣1.256E-02
␣3.309E-01␣1.286E-02␣2.690E-01␣1.282E-02␣1.434E-02␣2.571E-01␣1.503E-02
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␣1.846E-02␣1.846E-02␣1.753E-02␣1.753E-02␣1.806E-02␣3.150E-02␣3.150E-02
␣1.545E-02␣1.545E-02␣1.295E-02␣1.295E-02␣1.292E-02␣2.309E-02␣2.309E-02
␣1.559E-02␣1.559E-02␣1.142E-02␣1.142E-02␣1.220E-02␣1.766E-02␣1.766E-02
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␣0.500␣1.0945␣0.0716␣0.735␣0.675␣0.8744␣0.0556␣0.724␣0.870␣0.7233␣0.0443␣0.701
␣1.020␣0.6444␣0.0389␣0.716
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␣␣␣29␣␣␣␣7
␣␣␣␣␣␣␣0.0␣␣␣␣␣␣␣0.2␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣0.6␣␣␣␣␣␣␣0.8␣␣␣␣␣␣␣1.0␣␣␣␣␣␣␣1.5␣␣␣␣␣␣␣␣␣2
␣␣␣␣␣␣␣␣␣3␣␣␣␣␣␣␣␣4␣␣␣␣␣␣␣␣␣5␣␣␣␣␣␣␣␣10␣␣␣␣␣␣␣␣20␣␣␣␣␣␣␣␣30␣␣␣␣␣␣␣␣40␣␣␣␣␣␣␣␣50

␣␣␣␣␣␣␣␣60␣␣␣␣␣␣␣␣70␣␣␣␣␣␣␣␣80␣␣␣␣␣␣␣␣90␣␣␣␣␣␣␣␣100␣␣␣␣␣␣␣␣110␣␣␣␣␣␣␣␣120␣␣␣␣␣␣␣␣130
␣␣␣␣␣␣␣␣140␣␣␣␣␣␣␣␣150␣␣␣␣␣␣␣␣160␣␣␣␣␣␣␣␣170␣␣␣␣␣␣␣␣180
␣␣␣␣␣␣0.340␣␣␣␣␣␣0.380␣␣␣␣␣␣0.400␣␣␣␣␣␣0.500␣␣␣␣␣␣0.675␣␣␣␣␣␣0.870␣␣␣␣␣␣1.020
␣2.246E+01␣1.091E-02␣1.018E+01␣1.019E-02␣9.275E-03␣8.736E+00␣6.855E-03
␣1.045E+01␣1.213E-02␣4.793E+00␣1.001E-02␣8.464E-03␣4.467E+00␣6.124E-03
␣4.908E+00␣1.086E-02␣3.149E+00␣8.882E-03␣7.157E-03␣3.010E+00␣8.108E-03
␣3.231E+00␣1.008E-02␣2.377E+00␣7.622E-03␣7.307E-03␣2.297E+00␣9.229E-03
␣2.443E+00␣9.265E-03␣1.930E+00␣7.485E-03␣8.758E-03␣1.882E+00␣8.526E-03
␣1.986E+00␣7.121E-03␣1.639E+00␣8.955E-03␣1.053E-02␣1.607E+00␣7.208E-03
␣1.686E+00␣5.404E-03␣1.429E+00␣1.073E-02␣1.128E-02␣1.408E+00␣7.453E-03
␣1.471E+00␣6.389E-03␣1.272E+00␣1.121E-02␣1.084E-02␣1.255E+00␣9.137E-03
␣1.306E+00␣9.136E-03␣1.042E+00␣1.048E-02␣1.054E-02␣1.029E+00␣1.016E-02
␣1.067E+00␣1.060E-02␣8.794E-01␣1.026E-02␣1.179E-02␣8.664E-01␣1.001E-02
␣8.985E-01␣1.039E-02␣7.553E-01␣1.722E-02␣2.019E-02␣7.425E-01␣1.522E-02
␣7.716E-01␣1.625E-02␣6.578E-01␣1.609E-02␣1.886E-02␣6.444E-01␣1.512E-02
␣6.728E-01␣1.727E-02␣5.788E-01␣1.591E-02␣1.790E-02␣5.647E-01␣1.641E-02
␣5.932E-01␣1.960E-02␣5.150E-01␣1.390E-02␣1.528E-02␣4.980E-01␣1.492E-02
␣5.231E-01␣1.783E-02␣4.109E-01␣1.176E-02␣1.297E-02␣3.873E-01␣1.232E-02
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␣1.100E-01␣1.100E-01␣8.561E-02␣8.561E-02␣8.322E-02␣7.405E-02␣7.405E-02
␣8.344E-02␣8.344E-02␣6.861E-02␣6.861E-02␣6.979E-02␣5.837E-02␣5.837E-02
␣5.986E-02␣5.986E-02␣5.103E-02␣5.103E-02␣5.532E-02␣5.035E-02␣5.035E-02
␣4.143E-02␣4.143E-02␣3.073E-02␣3.073E-02␣3.728E-02␣4.435E-02␣4.435E-02
␣2.493E-02␣2.493E-02␣2.180E-02␣2.180E-02␣2.545E-02␣3.734E-02␣3.734E-02
␣1.788E-02␣1.788E-02␣1.706E-02␣1.706E-02␣1.679E-02␣2.764E-02␣2.764E-02
␣1.455E-02␣1.455E-02␣1.209E-02␣1.209E-02␣1.177E-02␣2.014E-02␣2.014E-02
␣1.470E-02␣1.470E-02␣1.034E-02␣1.034E-02␣1.129E-02␣1.587E-02␣1.587E-02
␣2.246E+01␣1.091E-02␣1.018E+01␣1.019E-02␣9.275E-03␣8.736E+00␣6.855E-03
␣1.045E+01␣1.213E-02␣4.793E+00␣1.001E-02␣8.464E-03␣4.467E+00␣6.124E-03
␣4.908E+00␣1.086E-02␣3.149E+00␣8.882E-03␣7.157E-03␣3.010E+00␣8.108E-03
␣3.231E+00␣1.008E-02␣2.377E+00␣7.622E-03␣7.307E-03␣2.297E+00␣9.229E-03
␣2.443E+00␣9.265E-03␣1.930E+00␣7.485E-03␣8.758E-03␣1.882E+00␣8.526E-03
␣1.986E+00␣7.121E-03␣1.639E+00␣8.955E-03␣1.053E-02␣1.607E+00␣7.208E-03
␣1.686E+00␣5.404E-03␣1.429E+00␣1.073E-02␣1.128E-02␣1.408E+00␣7.453E-03
␣1.471E+00␣6.389E-03␣1.272E+00␣1.121E-02␣1.084E-02␣1.255E+00␣9.137E-03
␣1.306E+00␣9.136E-03␣1.042E+00␣1.048E-02␣1.054E-02␣1.029E+00␣1.016E-02
␣1.067E+00␣1.060E-02␣8.794E-01␣1.026E-02␣1.179E-02␣8.664E-01␣1.001E-02

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␣3.026E-01␣1.293E-02␣2.490E-01␣1.267E-02␣1.359E-02␣2.374E-01␣1.550E-02
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␣2.246E+01␣1.091E-02␣1.018E+01␣1.019E-02␣9.275E-03␣8.736E+00␣6.855E-03
␣1.045E+01␣1.213E-02␣4.793E+00␣1.001E-02␣8.464E-03␣4.467E+00␣6.124E-03
␣4.908E+00␣1.086E-02␣3.149E+00␣8.882E-03␣7.157E-03␣3.010E+00␣8.108E-03
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␣2.443E+00␣9.265E-03␣1.930E+00␣7.485E-03␣8.758E-03␣1.882E+00␣8.526E-03
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␣1.686E+00␣5.404E-03␣1.429E+00␣1.073E-02␣1.128E-02␣1.408E+00␣7.453E-03
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␣1.306E+00␣9.136E-03␣1.042E+00␣1.048E-02␣1.054E-02␣1.029E+00␣1.016E-02
␣1.067E+00␣1.060E-02␣8.794E-01␣1.026E-02␣1.179E-02␣8.664E-01␣1.001E-02
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␣2.246E+01␣1.091E-02␣1.018E+01␣1.019E-02␣9.275E-03␣8.736E+00␣6.855E-03
␣1.045E+01␣1.213E-02␣4.793E+00␣1.001E-02␣8.464E-03␣4.467E+00␣6.124E-03
␣4.908E+00␣1.086E-02␣3.149E+00␣8.882E-03␣7.157E-03␣3.010E+00␣8.108E-03
␣3.231E+00␣1.008E-02␣2.377E+00␣7.622E-03␣7.307E-03␣2.297E+00␣9.229E-03
␣2.443E+00␣9.265E-03␣1.930E+00␣7.485E-03␣8.758E-03␣1.882E+00␣8.526E-03
␣1.986E+00␣7.121E-03␣1.639E+00␣8.955E-03␣1.053E-02␣1.607E+00␣7.208E-03
␣1.686E+00␣5.404E-03␣1.429E+00␣1.073E-02␣1.128E-02␣1.408E+00␣7.453E-03
␣1.471E+00␣6.389E-03␣1.272E+00␣1.121E-02␣1.084E-02␣1.255E+00␣9.137E-03
␣1.306E+00␣9.136E-03␣1.042E+00␣1.048E-02␣1.054E-02␣1.029E+00␣1.016E-02
␣1.067E+00␣1.060E-02␣8.794E-01␣1.026E-02␣1.179E-02␣8.664E-01␣1.001E-02
␣8.985E-01␣1.039E-02␣7.553E-01␣1.722E-02␣2.019E-02␣7.425E-01␣1.522E-02
␣7.716E-01␣1.625E-02␣6.578E-01␣1.609E-02␣1.886E-02␣6.444E-01␣1.512E-02
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␣8.344E-02␣8.344E-02␣6.861E-02␣6.861E-02␣6.979E-02␣5.837E-02␣5.837E-02
␣5.986E-02␣5.986E-02␣5.103E-02␣5.103E-02␣5.532E-02␣5.035E-02␣5.035E-02
␣4.143E-02␣4.143E-02␣3.073E-02␣3.073E-02␣3.728E-02␣4.435E-02␣4.435E-02
␣2.493E-02␣2.493E-02␣2.180E-02␣2.180E-02␣2.545E-02␣3.734E-02␣3.734E-02
␣1.788E-02␣1.788E-02␣1.706E-02␣1.706E-02␣1.679E-02␣2.764E-02␣2.764E-02
␣1.455E-02␣1.455E-02␣1.209E-02␣1.209E-02␣1.177E-02␣2.014E-02␣2.014E-02
␣1.470E-02␣1.470E-02␣1.034E-02␣1.034E-02␣1.129E-02␣1.587E-02␣1.587E-02
␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣1.1␣␣␣␣␣0.005␣␣␣␣␣␣0.01RM␣12sep07MGA␣␣␣T
␣␣␣␣0

09/14/2008

C␣␣␣2␣␣␣␣3␣␣␣␣2␣␣␣-1␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣306.25␣␣␣␣␣-6
FFF␣0␣␣␣␣0␣390.00000␣␣␣␣g␣0.42␣␣␣a␣0.25␣01␣F␣T␣F␣F
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␣␣␣␣7␣␣␣␣0␣␣␣␣0␣␣␣␣0
␣1.000E+00Boundary␣Layer
␣0.340␣1.5438␣0.0747␣0.734␣0.360␣1.3944␣0.0675␣0.728␣0.400␣1.3332␣0.0635␣0.720
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␣1.020␣0.5114␣0.0255␣0.678
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␣␣␣29␣␣␣␣7
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␣␣␣␣␣␣␣140␣␣␣␣␣␣␣150␣␣␣␣␣␣␣160␣␣␣␣␣␣␣170␣␣␣␣␣␣␣180
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␣7.177E+00␣1.249E-02␣4.188E+00␣1.175E-02␣1.068E-02␣3.657E+00␣7.516E-03
␣4.377E+00␣1.345E-02␣2.670E+00␣1.136E-02␣9.772E-03␣2.455E+00␣6.840E-03
␣2.787E+00␣1.233E-02␣2.078E+00␣1.014E-02␣8.583E-03␣1.941E+00␣8.429E-03
␣2.171E+00␣1.121E-02␣1.750E+00␣9.008E-03␣8.716E-03␣1.648E+00␣9.352E-03
␣1.829E+00␣1.014E-02␣1.535E+00␣8.836E-03␣9.972E-03␣1.454E+00␣8.922E-03
␣1.603E+00␣8.095E-03␣1.379E+00␣9.993E-03␣1.155E-02␣1.310E+00␣8.010E-03
␣1.438E+00␣6.540E-03␣1.257E+00␣1.143E-02␣1.234E-02␣1.197E+00␣8.209E-03
␣1.309E+00␣7.221E-03␣1.157E+00␣1.186E-02␣1.214E-02␣1.103E+00␣9.482E-03
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␣1.032E+00␣1.071E-02␣8.730E-01␣1.106E-02␣1.299E-02␣8.289E-01␣1.042E-02
␣9.000E-01␣1.073E-02␣7.696E-01␣1.506E-02␣1.823E-02␣7.293E-01␣1.333E-02
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␣7.020E-01␣1.550E-02␣6.087E-01␣1.464E-02␣1.722E-02␣5.744E-01␣1.476E-02
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␣5.559E-01␣1.608E-02␣4.380E-01␣1.172E-02␣1.362E-02␣4.069E-01␣1.222E-02
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␣1.568E-02␣1.568E-02␣1.154E-02␣1.154E-02␣1.230E-02␣1.786E-02␣1.786E-02
␣7.177E+00␣1.249E-02␣4.188E+00␣1.175E-02␣1.068E-02␣3.657E+00␣7.516E-03
␣4.377E+00␣1.345E-02␣2.670E+00␣1.136E-02␣9.772E-03␣2.455E+00␣6.840E-03
␣2.787E+00␣1.233E-02␣2.078E+00␣1.014E-02␣8.583E-03␣1.941E+00␣8.429E-03
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␣1.829E+00␣1.014E-02␣1.535E+00␣8.836E-03␣9.972E-03␣1.454E+00␣8.922E-03
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␣1.438E+00␣6.540E-03␣1.257E+00␣1.143E-02␣1.234E-02␣1.197E+00␣8.209E-03
␣1.309E+00␣7.221E-03␣1.157E+00␣1.186E-02␣1.214E-02␣1.103E+00␣9.482E-03
␣1.203E+00␣9.400E-03␣9.984E-01␣1.131E-02␣1.199E-02␣9.500E-01␣1.035E-02
␣1.032E+00␣1.071E-02␣8.730E-01␣1.106E-02␣1.299E-02␣8.289E-01␣1.042E-02
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␣1.568E-02␣1.568E-02␣1.154E-02␣1.154E-02␣1.230E-02␣1.786E-02␣1.786E-02
␣7.177E+00␣1.249E-02␣4.188E+00␣1.175E-02␣1.068E-02␣3.657E+00␣7.516E-03
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␣1.438E+00␣6.540E-03␣1.257E+00␣1.143E-02␣1.234E-02␣1.197E+00␣8.209E-03
␣1.309E+00␣7.221E-03␣1.157E+00␣1.186E-02␣1.214E-02␣1.103E+00␣9.482E-03
␣1.203E+00␣9.400E-03␣9.984E-01␣1.131E-02␣1.199E-02␣9.500E-01␣1.035E-02
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␣2.618E-02␣2.618E-02␣2.289E-02␣2.289E-02␣2.749E-02␣4.237E-02␣4.237E-02
␣1.853E-02␣1.853E-02␣1.758E-02␣1.758E-02␣1.820E-02␣3.194E-02␣3.194E-02
␣1.555E-02␣1.555E-02␣1.305E-02␣1.305E-02␣1.306E-02␣2.341E-02␣2.341E-02
␣1.568E-02␣1.568E-02␣1.154E-02␣1.154E-02␣1.230E-02␣1.786E-02␣1.786E-02
␣7.177E+00␣1.249E-02␣4.188E+00␣1.175E-02␣1.068E-02␣3.657E+00␣7.516E-03
␣4.377E+00␣1.345E-02␣2.670E+00␣1.136E-02␣9.772E-03␣2.455E+00␣6.840E-03
␣2.787E+00␣1.233E-02␣2.078E+00␣1.014E-02␣8.583E-03␣1.941E+00␣8.429E-03
␣2.171E+00␣1.121E-02␣1.750E+00␣9.008E-03␣8.716E-03␣1.648E+00␣9.352E-03
␣1.829E+00␣1.014E-02␣1.535E+00␣8.836E-03␣9.972E-03␣1.454E+00␣8.922E-03
␣1.603E+00␣8.095E-03␣1.379E+00␣9.993E-03␣1.155E-02␣1.310E+00␣8.010E-03
␣1.438E+00␣6.540E-03␣1.257E+00␣1.143E-02␣1.234E-02␣1.197E+00␣8.209E-03
␣1.309E+00␣7.221E-03␣1.157E+00␣1.186E-02␣1.214E-02␣1.103E+00␣9.482E-03
␣1.203E+00␣9.400E-03␣9.984E-01␣1.131E-02␣1.199E-02␣9.500E-01␣1.035E-02
␣1.032E+00␣1.071E-02␣8.730E-01␣1.106E-02␣1.299E-02␣8.289E-01␣1.042E-02
␣9.000E-01␣1.073E-02␣7.696E-01␣1.506E-02␣1.823E-02␣7.293E-01␣1.333E-02
␣7.921E-01␣1.419E-02␣6.828E-01␣1.473E-02␣1.786E-02␣6.457E-01␣1.375E-02
␣7.020E-01␣1.550E-02␣6.087E-01␣1.464E-02␣1.722E-02␣5.744E-01␣1.476E-02
␣6.249E-01␣1.732E-02␣5.450E-01␣1.319E-02␣1.528E-02␣5.122E-01␣1.383E-02
␣5.559E-01␣1.608E-02␣4.380E-01␣1.172E-02␣1.362E-02␣4.069E-01␣1.222E-02
␣4.347E-01␣1.333E-02␣3.478E-01␣1.170E-02␣1.348E-02␣3.225E-01␣1.259E-02
␣3.337E-01␣1.285E-02␣2.711E-01␣1.285E-02␣1.443E-02␣2.590E-01␣1.499E-02
␣2.569E-01␣1.517E-02␣2.082E-01␣1.315E-02␣1.459E-02␣2.127E-01␣1.612E-02
␣2.087E-01␣1.640E-02␣1.641E-01␣1.641E-01␣1.557E-01␣1.770E-01␣1.770E-01
␣1.758E-01␣1.758E-01␣1.341E-01␣1.341E-01␣1.254E-01␣1.431E-01␣1.431E-01
␣1.469E-01␣1.469E-01␣1.119E-01␣1.119E-01␣1.066E-01␣1.109E-01␣1.109E-01
␣1.176E-01␣1.176E-01␣9.254E-02␣9.254E-02␣9.148E-02␣8.550E-02␣8.550E-02
␣8.874E-02␣8.874E-02␣7.322E-02␣7.322E-02␣7.604E-02␣6.895E-02␣6.895E-02
␣6.354E-02␣6.354E-02␣5.450E-02␣5.450E-02␣6.032E-02␣5.939E-02␣5.939E-02

␣4.396E-02␣4.396E-02␣3.320E-02␣3.320E-02␣4.072E-02␣5.094E-02␣5.094E-02
␣2.618E-02␣2.618E-02␣2.289E-02␣2.289E-02␣2.749E-02␣4.237E-02␣4.237E-02
␣1.853E-02␣1.853E-02␣1.758E-02␣1.758E-02␣1.820E-02␣3.194E-02␣3.194E-02
␣1.555E-02␣1.555E-02␣1.305E-02␣1.305E-02␣1.306E-02␣2.341E-02␣2.341E-02
␣1.568E-02␣1.568E-02␣1.154E-02␣1.154E-02␣1.230E-02␣1.786E-02␣1.786E-02
␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣1.1␣␣␣␣␣0.005␣␣␣␣␣␣0.01RM␣14sep08MGA␣␣␣T
␣␣␣␣0

12/03/2008

C␣␣␣2␣␣␣␣3␣␣␣␣2␣␣␣-1␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣306.25␣␣␣␣-7
FFF␣0␣␣␣␣0␣390.00000␣␣␣␣g␣0.41␣␣␣a␣0.23␣01␣F␣T␣F␣F
DATA/Filter/ASTER_vnir.flt
␣␣␣␣7␣␣␣␣0USS␣0␣␣␣10␣␣␣␣0␣␣␣␣0␣␣␣␣␣␣␣87.37284␣␣0.0␣␣␣␣␣␣␣0.0␣␣␣␣␣␣.000␣␣␣␣␣0.793
␣␣␣␣7␣␣␣␣0␣␣␣␣0␣␣␣␣0
␣1.000E+00Boundary␣Layer
␣0.340␣1.5205␣0.0761␣0.735␣0.360␣1.3775␣0.0690␣0.730␣0.400␣1.3198␣0.0649␣0.722
␣0.500␣1.1285␣0.0544␣0.716␣0.675␣0.8155␣0.0402␣0.698␣0.870␣0.6236␣0.0308␣0.666
␣1.020␣0.5246␣0.0265␣0.682
␣␣␣705.000␣␣␣␣␣␣.000␣␣␣180.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣0
␣␣␣12␣␣␣␣1␣␣337␣␣␣␣0
-163.49522␣␣59.13137␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000
␣␣␣29␣␣␣␣7
␣␣␣␣␣␣␣0.0␣␣␣␣␣␣␣0.2␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣0.6␣␣␣␣␣␣␣0.8␣␣␣␣␣␣␣1.0␣␣␣␣␣␣␣1.5␣␣␣␣␣␣␣␣␣2
␣␣␣␣␣␣␣␣␣3␣␣␣␣␣␣␣␣4␣␣␣␣␣␣␣␣␣5␣␣␣␣␣␣␣␣10␣␣␣␣␣␣␣␣20␣␣␣␣␣␣␣␣30␣␣␣␣␣␣␣␣40␣␣␣␣␣␣␣␣50
␣␣␣␣␣␣␣␣60␣␣␣␣␣␣␣␣70␣␣␣␣␣␣␣␣80␣␣␣␣␣␣␣␣90␣␣␣␣␣␣␣100␣␣␣␣␣␣␣110␣␣␣␣␣␣␣120␣␣␣␣␣␣␣130
␣␣␣␣␣␣␣140␣␣␣␣␣␣␣150␣␣␣␣␣␣␣160␣␣␣␣␣␣␣170␣␣␣␣␣␣␣180
␣␣␣␣␣␣0.340␣␣␣␣␣␣0.380␣␣␣␣␣␣0.400␣␣␣␣␣␣0.500␣␣␣␣␣␣0.675␣␣␣␣␣␣0.870␣␣␣␣␣␣1.020
␣8.085E+00␣1.233E-02␣4.585E+00␣1.160E-02␣1.053E-02␣3.998E+00␣7.445E-03
␣4.782E+00␣1.333E-02␣2.833E+00␣1.122E-02␣9.640E-03␣2.611E+00␣6.766E-03
␣2.951E+00␣1.219E-02␣2.167E+00␣1.002E-02␣8.431E-03␣2.031E+00␣8.405E-03
␣2.260E+00␣1.111E-02␣1.806E+00␣8.866E-03␣8.566E-03␣1.707E+00␣9.355E-03
␣1.885E+00␣1.005E-02␣1.574E+00␣8.697E-03␣9.848E-03␣1.495E+00␣8.893E-03
␣1.640E+00␣7.992E-03␣1.406E+00␣9.892E-03␣1.145E-02␣1.341E+00␣7.934E-03
␣1.465E+00␣6.417E-03␣1.276E+00␣1.138E-02␣1.224E-02␣1.220E+00␣8.136E-03
␣1.327E+00␣7.134E-03␣1.171E+00␣1.181E-02␣1.203E-02␣1.120E+00␣9.454E-03
␣1.215E+00␣9.383E-03␣1.005E+00␣1.124E-02␣1.186E-02␣9.603E-01␣1.035E-02
␣1.038E+00␣1.071E-02␣8.756E-01␣1.100E-02␣1.288E-02␣8.350E-01␣1.039E-02
␣9.019E-01␣1.071E-02␣7.700E-01␣1.527E-02␣1.842E-02␣7.327E-01␣1.350E-02
␣7.918E-01␣1.440E-02␣6.817E-01␣1.487E-02␣1.797E-02␣6.473E-01␣1.389E-02
␣7.005E-01␣1.570E-02␣6.069E-01␣1.477E-02␣1.729E-02␣5.748E-01␣1.492E-02
␣6.229E-01␣1.757E-02␣5.430E-01␣1.327E-02␣1.528E-02␣5.120E-01␣1.393E-02
␣5.535E-01␣1.628E-02␣4.359E-01␣1.172E-02␣1.354E-02␣4.057E-01␣1.222E-02

␣4.320E-01␣1.340E-02␣3.458E-01␣1.167E-02␣1.337E-02␣3.206E-01␣1.256E-02
␣3.309E-01␣1.286E-02␣2.690E-01␣1.282E-02␣1.434E-02␣2.571E-01␣1.503E-02
␣2.540E-01␣1.524E-02␣2.061E-01␣1.312E-02␣1.449E-02␣2.110E-01␣1.620E-02
␣2.064E-01␣1.650E-02␣1.623E-01␣1.623E-01␣1.538E-01␣1.757E-01␣1.757E-01
␣1.742E-01␣1.742E-01␣1.326E-01␣1.326E-01␣1.238E-01␣1.419E-01␣1.419E-01
␣1.459E-01␣1.459E-01␣1.109E-01␣1.109E-01␣1.054E-01␣1.097E-01␣1.097E-01
␣1.169E-01␣1.169E-01␣9.190E-02␣9.190E-02␣9.069E-02␣8.425E-02␣8.425E-02
␣8.829E-02␣8.829E-02␣7.281E-02␣7.281E-02␣7.545E-02␣6.778E-02␣6.778E-02
␣6.321E-02␣6.321E-02␣5.418E-02␣5.418E-02␣5.985E-02␣5.839E-02␣5.839E-02
␣4.372E-02␣4.372E-02␣3.295E-02␣3.295E-02␣4.040E-02␣5.024E-02␣5.024E-02
␣2.604E-02␣2.604E-02␣2.278E-02␣2.278E-02␣2.729E-02␣4.186E-02␣4.186E-02
␣1.846E-02␣1.846E-02␣1.753E-02␣1.753E-02␣1.806E-02␣3.150E-02␣3.150E-02
␣1.545E-02␣1.545E-02␣1.295E-02␣1.295E-02␣1.292E-02␣2.309E-02␣2.309E-02
␣1.559E-02␣1.559E-02␣1.142E-02␣1.142E-02␣1.220E-02␣1.766E-02␣1.766E-02
␣8.085E+00␣1.233E-02␣4.585E+00␣1.160E-02␣1.053E-02␣3.998E+00␣7.445E-03
␣4.782E+00␣1.333E-02␣2.833E+00␣1.122E-02␣9.640E-03␣2.611E+00␣6.766E-03
␣2.951E+00␣1.219E-02␣2.167E+00␣1.002E-02␣8.431E-03␣2.031E+00␣8.405E-03
␣2.260E+00␣1.111E-02␣1.806E+00␣8.866E-03␣8.566E-03␣1.707E+00␣9.355E-03
␣1.885E+00␣1.005E-02␣1.574E+00␣8.697E-03␣9.848E-03␣1.495E+00␣8.893E-03
␣1.640E+00␣7.992E-03␣1.406E+00␣9.892E-03␣1.145E-02␣1.341E+00␣7.934E-03
␣1.465E+00␣6.417E-03␣1.276E+00␣1.138E-02␣1.224E-02␣1.220E+00␣8.136E-03
␣1.327E+00␣7.134E-03␣1.171E+00␣1.181E-02␣1.203E-02␣1.120E+00␣9.454E-03
␣1.215E+00␣9.383E-03␣1.005E+00␣1.124E-02␣1.186E-02␣9.603E-01␣1.035E-02
␣1.038E+00␣1.071E-02␣8.756E-01␣1.100E-02␣1.288E-02␣8.350E-01␣1.039E-02
␣9.019E-01␣1.071E-02␣7.700E-01␣1.527E-02␣1.842E-02␣7.327E-01␣1.350E-02
␣7.918E-01␣1.440E-02␣6.817E-01␣1.487E-02␣1.797E-02␣6.473E-01␣1.389E-02
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␣6.229E-01␣1.757E-02␣5.430E-01␣1.327E-02␣1.528E-02␣5.120E-01␣1.393E-02
␣5.535E-01␣1.628E-02␣4.359E-01␣1.172E-02␣1.354E-02␣4.057E-01␣1.222E-02
␣4.320E-01␣1.340E-02␣3.458E-01␣1.167E-02␣1.337E-02␣3.206E-01␣1.256E-02
␣3.309E-01␣1.286E-02␣2.690E-01␣1.282E-02␣1.434E-02␣2.571E-01␣1.503E-02
␣2.540E-01␣1.524E-02␣2.061E-01␣1.312E-02␣1.449E-02␣2.110E-01␣1.620E-02
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␣8.829E-02␣8.829E-02␣7.281E-02␣7.281E-02␣7.545E-02␣6.778E-02␣6.778E-02
␣6.321E-02␣6.321E-02␣5.418E-02␣5.418E-02␣5.985E-02␣5.839E-02␣5.839E-02
␣4.372E-02␣4.372E-02␣3.295E-02␣3.295E-02␣4.040E-02␣5.024E-02␣5.024E-02
␣2.604E-02␣2.604E-02␣2.278E-02␣2.278E-02␣2.729E-02␣4.186E-02␣4.186E-02
␣1.846E-02␣1.846E-02␣1.753E-02␣1.753E-02␣1.806E-02␣3.150E-02␣3.150E-02
␣1.545E-02␣1.545E-02␣1.295E-02␣1.295E-02␣1.292E-02␣2.309E-02␣2.309E-02

␣1.559E-02␣1.559E-02␣1.142E-02␣1.142E-02␣1.220E-02␣1.766E-02␣1.766E-02
␣8.085E+00␣1.233E-02␣4.585E+00␣1.160E-02␣1.053E-02␣3.998E+00␣7.445E-03
␣4.782E+00␣1.333E-02␣2.833E+00␣1.122E-02␣9.640E-03␣2.611E+00␣6.766E-03
␣2.951E+00␣1.219E-02␣2.167E+00␣1.002E-02␣8.431E-03␣2.031E+00␣8.405E-03
␣2.260E+00␣1.111E-02␣1.806E+00␣8.866E-03␣8.566E-03␣1.707E+00␣9.355E-03
␣1.885E+00␣1.005E-02␣1.574E+00␣8.697E-03␣9.848E-03␣1.495E+00␣8.893E-03
␣1.640E+00␣7.992E-03␣1.406E+00␣9.892E-03␣1.145E-02␣1.341E+00␣7.934E-03
␣1.465E+00␣6.417E-03␣1.276E+00␣1.138E-02␣1.224E-02␣1.220E+00␣8.136E-03
␣1.327E+00␣7.134E-03␣1.171E+00␣1.181E-02␣1.203E-02␣1.120E+00␣9.454E-03
␣1.215E+00␣9.383E-03␣1.005E+00␣1.124E-02␣1.186E-02␣9.603E-01␣1.035E-02
␣1.038E+00␣1.071E-02␣8.756E-01␣1.100E-02␣1.288E-02␣8.350E-01␣1.039E-02
␣9.019E-01␣1.071E-02␣7.700E-01␣1.527E-02␣1.842E-02␣7.327E-01␣1.350E-02
␣7.918E-01␣1.440E-02␣6.817E-01␣1.487E-02␣1.797E-02␣6.473E-01␣1.389E-02
␣7.005E-01␣1.570E-02␣6.069E-01␣1.477E-02␣1.729E-02␣5.748E-01␣1.492E-02
␣6.229E-01␣1.757E-02␣5.430E-01␣1.327E-02␣1.528E-02␣5.120E-01␣1.393E-02
␣5.535E-01␣1.628E-02␣4.359E-01␣1.172E-02␣1.354E-02␣4.057E-01␣1.222E-02
␣4.320E-01␣1.340E-02␣3.458E-01␣1.167E-02␣1.337E-02␣3.206E-01␣1.256E-02
␣3.309E-01␣1.286E-02␣2.690E-01␣1.282E-02␣1.434E-02␣2.571E-01␣1.503E-02
␣2.540E-01␣1.524E-02␣2.061E-01␣1.312E-02␣1.449E-02␣2.110E-01␣1.620E-02
␣2.064E-01␣1.650E-02␣1.623E-01␣1.623E-01␣1.538E-01␣1.757E-01␣1.757E-01
␣1.742E-01␣1.742E-01␣1.326E-01␣1.326E-01␣1.238E-01␣1.419E-01␣1.419E-01
␣1.459E-01␣1.459E-01␣1.109E-01␣1.109E-01␣1.054E-01␣1.097E-01␣1.097E-01
␣1.169E-01␣1.169E-01␣9.190E-02␣9.190E-02␣9.069E-02␣8.425E-02␣8.425E-02
␣8.829E-02␣8.829E-02␣7.281E-02␣7.281E-02␣7.545E-02␣6.778E-02␣6.778E-02
␣6.321E-02␣6.321E-02␣5.418E-02␣5.418E-02␣5.985E-02␣5.839E-02␣5.839E-02
␣4.372E-02␣4.372E-02␣3.295E-02␣3.295E-02␣4.040E-02␣5.024E-02␣5.024E-02
␣2.604E-02␣2.604E-02␣2.278E-02␣2.278E-02␣2.729E-02␣4.186E-02␣4.186E-02
␣1.846E-02␣1.846E-02␣1.753E-02␣1.753E-02␣1.806E-02␣3.150E-02␣3.150E-02
␣1.545E-02␣1.545E-02␣1.295E-02␣1.295E-02␣1.292E-02␣2.309E-02␣2.309E-02
␣1.559E-02␣1.559E-02␣1.142E-02␣1.142E-02␣1.220E-02␣1.766E-02␣1.766E-02
␣8.085E+00␣1.233E-02␣4.585E+00␣1.160E-02␣1.053E-02␣3.998E+00␣7.445E-03
␣4.782E+00␣1.333E-02␣2.833E+00␣1.122E-02␣9.640E-03␣2.611E+00␣6.766E-03
␣2.951E+00␣1.219E-02␣2.167E+00␣1.002E-02␣8.431E-03␣2.031E+00␣8.405E-03
␣2.260E+00␣1.111E-02␣1.806E+00␣8.866E-03␣8.566E-03␣1.707E+00␣9.355E-03
␣1.885E+00␣1.005E-02␣1.574E+00␣8.697E-03␣9.848E-03␣1.495E+00␣8.893E-03
␣1.640E+00␣7.992E-03␣1.406E+00␣9.892E-03␣1.145E-02␣1.341E+00␣7.934E-03
␣1.465E+00␣6.417E-03␣1.276E+00␣1.138E-02␣1.224E-02␣1.220E+00␣8.136E-03
␣1.327E+00␣7.134E-03␣1.171E+00␣1.181E-02␣1.203E-02␣1.120E+00␣9.454E-03
␣1.215E+00␣9.383E-03␣1.005E+00␣1.124E-02␣1.186E-02␣9.603E-01␣1.035E-02
␣1.038E+00␣1.071E-02␣8.756E-01␣1.100E-02␣1.288E-02␣8.350E-01␣1.039E-02
␣9.019E-01␣1.071E-02␣7.700E-01␣1.527E-02␣1.842E-02␣7.327E-01␣1.350E-02
␣7.918E-01␣1.440E-02␣6.817E-01␣1.487E-02␣1.797E-02␣6.473E-01␣1.389E-02

␣7.005E-01␣1.570E-02␣6.069E-01␣1.477E-02␣1.729E-02␣5.748E-01␣1.492E-02
␣6.229E-01␣1.757E-02␣5.430E-01␣1.327E-02␣1.528E-02␣5.120E-01␣1.393E-02
␣5.535E-01␣1.628E-02␣4.359E-01␣1.172E-02␣1.354E-02␣4.057E-01␣1.222E-02
␣4.320E-01␣1.340E-02␣3.458E-01␣1.167E-02␣1.337E-02␣3.206E-01␣1.256E-02
␣3.309E-01␣1.286E-02␣2.690E-01␣1.282E-02␣1.434E-02␣2.571E-01␣1.503E-02
␣2.540E-01␣1.524E-02␣2.061E-01␣1.312E-02␣1.449E-02␣2.110E-01␣1.620E-02
␣2.064E-01␣1.650E-02␣1.623E-01␣1.623E-01␣1.538E-01␣1.757E-01␣1.757E-01
␣1.742E-01␣1.742E-01␣1.326E-01␣1.326E-01␣1.238E-01␣1.419E-01␣1.419E-01
␣1.459E-01␣1.459E-01␣1.109E-01␣1.109E-01␣1.054E-01␣1.097E-01␣1.097E-01
␣1.169E-01␣1.169E-01␣9.190E-02␣9.190E-02␣9.069E-02␣8.425E-02␣8.425E-02
␣8.829E-02␣8.829E-02␣7.281E-02␣7.281E-02␣7.545E-02␣6.778E-02␣6.778E-02
␣6.321E-02␣6.321E-02␣5.418E-02␣5.418E-02␣5.985E-02␣5.839E-02␣5.839E-02
␣4.372E-02␣4.372E-02␣3.295E-02␣3.295E-02␣4.040E-02␣5.024E-02␣5.024E-02
␣2.604E-02␣2.604E-02␣2.278E-02␣2.278E-02␣2.729E-02␣4.186E-02␣4.186E-02
␣1.846E-02␣1.846E-02␣1.753E-02␣1.753E-02␣1.806E-02␣3.150E-02␣3.150E-02
␣1.545E-02␣1.545E-02␣1.295E-02␣1.295E-02␣1.292E-02␣2.309E-02␣2.309E-02
␣1.559E-02␣1.559E-02␣1.142E-02␣1.142E-02␣1.220E-02␣1.766E-02␣1.766E-02
␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣1.1␣␣␣␣␣0.005␣␣␣␣␣␣0.01RM␣03dec08MGA␣␣␣T
␣␣␣␣0

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C␣␣␣2␣␣␣␣3␣␣␣␣2␣␣␣-1␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣306.25␣␣␣␣-8
FFF␣0␣␣␣␣0␣390.00000␣␣␣␣g␣0.91␣␣␣a␣0.28␣01␣F␣T␣F␣F
DATA/Filter/ASTER_vnir.flt
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␣␣␣␣7␣␣␣␣0␣␣␣␣0␣␣␣␣0
␣1.000E+00Boundary␣Layer
␣0.340␣1.5252␣0.0758␣0.735␣0.360␣1.3809␣0.0687␣0.730␣0.400␣1.3225␣0.0646␣0.722
␣0.500␣1.1293␣0.0542␣0.715␣0.675␣0.8141␣0.0400␣0.697␣0.870␣0.6213␣0.0306␣0.665
␣1.020␣0.5220␣0.0263␣0.681
␣␣␣705.000␣␣␣␣␣␣.000␣␣␣180.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣0
␣␣␣12␣␣␣␣1␣␣244␣␣␣␣0
-144.39510␣␣31.34234␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000
␣␣␣29␣␣␣␣7
␣␣␣␣␣␣␣0.0␣␣␣␣␣␣␣0.2␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣0.6␣␣␣␣␣␣␣0.8␣␣␣␣␣␣␣1.0␣␣␣␣␣␣␣1.5␣␣␣␣␣␣␣␣␣2
␣␣␣␣␣␣␣␣␣3␣␣␣␣␣␣␣␣4␣␣␣␣␣␣␣␣␣5␣␣␣␣␣␣␣␣10␣␣␣␣␣␣␣␣20␣␣␣␣␣␣␣␣30␣␣␣␣␣␣␣␣40␣␣␣␣␣␣␣␣50
␣␣␣␣␣␣␣␣60␣␣␣␣␣␣␣␣70␣␣␣␣␣␣␣␣80␣␣␣␣␣␣␣␣90␣␣␣␣␣␣␣100␣␣␣␣␣␣␣␣110␣␣␣␣␣␣␣␣120␣␣␣␣␣␣␣␣130
␣␣␣␣␣␣␣140␣␣␣␣␣␣␣␣150␣␣␣␣␣␣␣␣160␣␣␣␣␣␣␣␣170␣␣␣␣␣␣␣␣180
␣␣␣␣␣␣0.340␣␣␣␣␣␣0.380␣␣␣␣␣␣0.400␣␣␣␣␣␣0.500␣␣␣␣␣␣0.675␣␣␣␣␣␣0.870␣␣␣␣␣␣1.020
␣7.893E+00␣1.236E-02␣4.501E+00␣1.163E-02␣1.057E-02␣3.926E+00␣7.459E-03
␣4.697E+00␣1.335E-02␣2.800E+00␣1.125E-02␣9.666E-03␣2.579E+00␣6.781E-03
␣2.917E+00␣1.222E-02␣2.149E+00␣1.004E-02␣8.461E-03␣2.013E+00␣8.410E-03

␣2.242E+00␣1.113E-02␣1.795E+00␣8.893E-03␣8.596E-03␣1.695E+00␣9.352E-03
␣1.873E+00␣1.007E-02␣1.566E+00␣8.724E-03␣9.871E-03␣1.487E+00␣8.899E-03
␣1.633E+00␣8.013E-03␣1.401E+00␣9.910E-03␣1.147E-02␣1.335E+00␣7.949E-03
␣1.459E+00␣6.441E-03␣1.272E+00␣1.139E-02␣1.226E-02␣1.215E+00␣8.151E-03
␣1.324E+00␣7.151E-03␣1.168E+00␣1.182E-02␣1.205E-02␣1.117E+00␣9.459E-03
␣1.213E+00␣9.388E-03␣1.003E+00␣1.126E-02␣1.188E-02␣9.583E-01␣1.035E-02
␣1.037E+00␣1.071E-02␣8.751E-01␣1.101E-02␣1.290E-02␣8.337E-01␣1.039E-02
␣9.015E-01␣1.072E-02␣7.699E-01␣1.522E-02␣1.838E-02␣7.320E-01␣1.346E-02
␣7.918E-01␣1.435E-02␣6.820E-01␣1.485E-02␣1.794E-02␣6.470E-01␣1.387E-02
␣7.008E-01␣1.566E-02␣6.072E-01␣1.475E-02␣1.727E-02␣5.747E-01␣1.489E-02
␣6.233E-01␣1.752E-02␣5.434E-01␣1.325E-02␣1.527E-02␣5.120E-01␣1.391E-02
␣5.541E-01␣1.623E-02␣4.363E-01␣1.172E-02␣1.355E-02␣4.059E-01␣1.222E-02
␣4.325E-01␣1.338E-02␣3.461E-01␣1.167E-02␣1.340E-02␣3.210E-01␣1.257E-02
␣3.315E-01␣1.286E-02␣2.694E-01␣1.283E-02␣1.435E-02␣2.574E-01␣1.502E-02
␣2.545E-01␣1.522E-02␣2.065E-01␣1.313E-02␣1.451E-02␣2.113E-01␣1.618E-02
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␣4.377E-02␣4.377E-02␣3.301E-02␣3.301E-02␣4.047E-02␣5.038E-02␣5.038E-02
␣2.607E-02␣2.607E-02␣2.281E-02␣2.281E-02␣2.733E-02␣4.197E-02␣4.197E-02
␣1.847E-02␣1.847E-02␣1.754E-02␣1.754E-02␣1.809E-02␣3.159E-02␣3.159E-02
␣1.547E-02␣1.547E-02␣1.297E-02␣1.297E-02␣1.295E-02␣2.315E-02␣2.315E-02
␣1.561E-02␣1.561E-02␣1.145E-02␣1.145E-02␣1.222E-02␣1.770E-02␣1.770E-02
␣7.893E+00␣1.236E-02␣4.501E+00␣1.163E-02␣1.057E-02␣3.926E+00␣7.459E-03
␣4.697E+00␣1.335E-02␣2.800E+00␣1.125E-02␣9.666E-03␣2.579E+00␣6.781E-03
␣2.917E+00␣1.222E-02␣2.149E+00␣1.004E-02␣8.461E-03␣2.013E+00␣8.410E-03
␣2.242E+00␣1.113E-02␣1.795E+00␣8.893E-03␣8.596E-03␣1.695E+00␣9.352E-03
␣1.873E+00␣1.007E-02␣1.566E+00␣8.724E-03␣9.871E-03␣1.487E+00␣8.899E-03
␣1.633E+00␣8.013E-03␣1.401E+00␣9.910E-03␣1.147E-02␣1.335E+00␣7.949E-03
␣1.459E+00␣6.441E-03␣1.272E+00␣1.139E-02␣1.226E-02␣1.215E+00␣8.151E-03
␣1.324E+00␣7.151E-03␣1.168E+00␣1.182E-02␣1.205E-02␣1.117E+00␣9.459E-03
␣1.213E+00␣9.388E-03␣1.003E+00␣1.126E-02␣1.188E-02␣9.583E-01␣1.035E-02
␣1.037E+00␣1.071E-02␣8.751E-01␣1.101E-02␣1.290E-02␣8.337E-01␣1.039E-02
␣9.015E-01␣1.072E-02␣7.699E-01␣1.522E-02␣1.838E-02␣7.320E-01␣1.346E-02
␣7.918E-01␣1.435E-02␣6.820E-01␣1.485E-02␣1.794E-02␣6.470E-01␣1.387E-02
␣7.008E-01␣1.566E-02␣6.072E-01␣1.475E-02␣1.727E-02␣5.747E-01␣1.489E-02
␣6.233E-01␣1.752E-02␣5.434E-01␣1.325E-02␣1.527E-02␣5.120E-01␣1.391E-02
␣5.541E-01␣1.623E-02␣4.363E-01␣1.172E-02␣1.355E-02␣4.059E-01␣1.222E-02
␣4.325E-01␣1.338E-02␣3.461E-01␣1.167E-02␣1.340E-02␣3.210E-01␣1.257E-02

␣3.315E-01␣1.286E-02␣2.694E-01␣1.283E-02␣1.435E-02␣2.574E-01␣1.502E-02
␣2.545E-01␣1.522E-02␣2.065E-01␣1.313E-02␣1.451E-02␣2.113E-01␣1.618E-02
␣2.068E-01␣1.648E-02␣1.626E-01␣1.626E-01␣1.542E-01␣1.759E-01␣1.759E-01
␣1.745E-01␣1.745E-01␣1.328E-01␣1.328E-01␣1.241E-01␣1.422E-01␣1.422E-01
␣1.461E-01␣1.461E-01␣1.110E-01␣1.110E-01␣1.056E-01␣1.100E-01␣1.100E-01
␣1.171E-01␣1.171E-01␣9.203E-02␣9.203E-02␣9.087E-02␣8.450E-02␣8.450E-02
␣8.838E-02␣8.838E-02␣7.289E-02␣7.289E-02␣7.557E-02␣6.801E-02␣6.801E-02
␣6.328E-02␣6.328E-02␣5.425E-02␣5.425E-02␣5.995E-02␣5.859E-02␣5.859E-02
␣4.377E-02␣4.377E-02␣3.301E-02␣3.301E-02␣4.047E-02␣5.038E-02␣5.038E-02
␣2.607E-02␣2.607E-02␣2.281E-02␣2.281E-02␣2.733E-02␣4.197E-02␣4.197E-02
␣1.847E-02␣1.847E-02␣1.754E-02␣1.754E-02␣1.809E-02␣3.159E-02␣3.159E-02
␣1.547E-02␣1.547E-02␣1.297E-02␣1.297E-02␣1.295E-02␣2.315E-02␣2.315E-02
␣1.561E-02␣1.561E-02␣1.145E-02␣1.145E-02␣1.222E-02␣1.770E-02␣1.770E-02
␣7.893E+00␣1.236E-02␣4.501E+00␣1.163E-02␣1.057E-02␣3.926E+00␣7.459E-03
␣4.697E+00␣1.335E-02␣2.800E+00␣1.125E-02␣9.666E-03␣2.579E+00␣6.781E-03
␣2.917E+00␣1.222E-02␣2.149E+00␣1.004E-02␣8.461E-03␣2.013E+00␣8.410E-03
␣2.242E+00␣1.113E-02␣1.795E+00␣8.893E-03␣8.596E-03␣1.695E+00␣9.352E-03
␣1.873E+00␣1.007E-02␣1.566E+00␣8.724E-03␣9.871E-03␣1.487E+00␣8.899E-03
␣1.633E+00␣8.013E-03␣1.401E+00␣9.910E-03␣1.147E-02␣1.335E+00␣7.949E-03
␣1.459E+00␣6.441E-03␣1.272E+00␣1.139E-02␣1.226E-02␣1.215E+00␣8.151E-03
␣1.324E+00␣7.151E-03␣1.168E+00␣1.182E-02␣1.205E-02␣1.117E+00␣9.459E-03
␣1.213E+00␣9.388E-03␣1.003E+00␣1.126E-02␣1.188E-02␣9.583E-01␣1.035E-02
␣1.037E+00␣1.071E-02␣8.751E-01␣1.101E-02␣1.290E-02␣8.337E-01␣1.039E-02
␣9.015E-01␣1.072E-02␣7.699E-01␣1.522E-02␣1.838E-02␣7.320E-01␣1.346E-02
␣7.918E-01␣1.435E-02␣6.820E-01␣1.485E-02␣1.794E-02␣6.470E-01␣1.387E-02
␣7.008E-01␣1.566E-02␣6.072E-01␣1.475E-02␣1.727E-02␣5.747E-01␣1.489E-02
␣6.233E-01␣1.752E-02␣5.434E-01␣1.325E-02␣1.527E-02␣5.120E-01␣1.391E-02
␣5.541E-01␣1.623E-02␣4.363E-01␣1.172E-02␣1.355E-02␣4.059E-01␣1.222E-02
␣4.325E-01␣1.338E-02␣3.461E-01␣1.167E-02␣1.340E-02␣3.210E-01␣1.257E-02
␣3.315E-01␣1.286E-02␣2.694E-01␣1.283E-02␣1.435E-02␣2.574E-01␣1.502E-02
␣2.545E-01␣1.522E-02␣2.065E-01␣1.313E-02␣1.451E-02␣2.113E-01␣1.618E-02
␣2.068E-01␣1.648E-02␣1.626E-01␣1.626E-01␣1.542E-01␣1.759E-01␣1.759E-01
␣1.745E-01␣1.745E-01␣1.328E-01␣1.328E-01␣1.241E-01␣1.422E-01␣1.422E-01
␣1.461E-01␣1.461E-01␣1.110E-01␣1.110E-01␣1.056E-01␣1.100E-01␣1.100E-01
␣1.171E-01␣1.171E-01␣9.203E-02␣9.203E-02␣9.087E-02␣8.450E-02␣8.450E-02
␣8.838E-02␣8.838E-02␣7.289E-02␣7.289E-02␣7.557E-02␣6.801E-02␣6.801E-02
␣6.328E-02␣6.328E-02␣5.425E-02␣5.425E-02␣5.995E-02␣5.859E-02␣5.859E-02
␣4.377E-02␣4.377E-02␣3.301E-02␣3.301E-02␣4.047E-02␣5.038E-02␣5.038E-02
␣2.607E-02␣2.607E-02␣2.281E-02␣2.281E-02␣2.733E-02␣4.197E-02␣4.197E-02
␣1.847E-02␣1.847E-02␣1.754E-02␣1.754E-02␣1.809E-02␣3.159E-02␣3.159E-02
␣1.547E-02␣1.547E-02␣1.297E-02␣1.297E-02␣1.295E-02␣2.315E-02␣2.315E-02
␣1.561E-02␣1.561E-02␣1.145E-02␣1.145E-02␣1.222E-02␣1.770E-02␣1.770E-02

␣7.893E+00␣1.236E-02␣4.501E+00␣1.163E-02␣1.057E-02␣3.926E+00␣7.459E-03
␣4.697E+00␣1.335E-02␣2.800E+00␣1.125E-02␣9.666E-03␣2.579E+00␣6.781E-03
␣2.917E+00␣1.222E-02␣2.149E+00␣1.004E-02␣8.461E-03␣2.013E+00␣8.410E-03
␣2.242E+00␣1.113E-02␣1.795E+00␣8.893E-03␣8.596E-03␣1.695E+00␣9.352E-03
␣1.873E+00␣1.007E-02␣1.566E+00␣8.724E-03␣9.871E-03␣1.487E+00␣8.899E-03
␣1.633E+00␣8.013E-03␣1.401E+00␣9.910E-03␣1.147E-02␣1.335E+00␣7.949E-03
␣1.459E+00␣6.441E-03␣1.272E+00␣1.139E-02␣1.226E-02␣1.215E+00␣8.151E-03
␣1.324E+00␣7.151E-03␣1.168E+00␣1.182E-02␣1.205E-02␣1.117E+00␣9.459E-03
␣1.213E+00␣9.388E-03␣1.003E+00␣1.126E-02␣1.188E-02␣9.583E-01␣1.035E-02
␣1.037E+00␣1.071E-02␣8.751E-01␣1.101E-02␣1.290E-02␣8.337E-01␣1.039E-02
␣9.015E-01␣1.072E-02␣7.699E-01␣1.522E-02␣1.838E-02␣7.320E-01␣1.346E-02
␣7.918E-01␣1.435E-02␣6.820E-01␣1.485E-02␣1.794E-02␣6.470E-01␣1.387E-02
␣7.008E-01␣1.566E-02␣6.072E-01␣1.475E-02␣1.727E-02␣5.747E-01␣1.489E-02
␣6.233E-01␣1.752E-02␣5.434E-01␣1.325E-02␣1.527E-02␣5.120E-01␣1.391E-02
␣5.541E-01␣1.623E-02␣4.363E-01␣1.172E-02␣1.355E-02␣4.059E-01␣1.222E-02
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␣3.315E-01␣1.286E-02␣2.694E-01␣1.283E-02␣1.435E-02␣2.574E-01␣1.502E-02
␣2.545E-01␣1.522E-02␣2.065E-01␣1.313E-02␣1.451E-02␣2.113E-01␣1.618E-02
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␣1.745E-01␣1.745E-01␣1.328E-01␣1.328E-01␣1.241E-01␣1.422E-01␣1.422E-01
␣1.461E-01␣1.461E-01␣1.110E-01␣1.110E-01␣1.056E-01␣1.100E-01␣1.100E-01
␣1.171E-01␣1.171E-01␣9.203E-02␣9.203E-02␣9.087E-02␣8.450E-02␣8.450E-02
␣8.838E-02␣8.838E-02␣7.289E-02␣7.289E-02␣7.557E-02␣6.801E-02␣6.801E-02
␣6.328E-02␣6.328E-02␣5.425E-02␣5.425E-02␣5.995E-02␣5.859E-02␣5.859E-02
␣4.377E-02␣4.377E-02␣3.301E-02␣3.301E-02␣4.047E-02␣5.038E-02␣5.038E-02
␣2.607E-02␣2.607E-02␣2.281E-02␣2.281E-02␣2.733E-02␣4.197E-02␣4.197E-02
␣1.847E-02␣1.847E-02␣1.754E-02␣1.754E-02␣1.809E-02␣3.159E-02␣3.159E-02
␣1.547E-02␣1.547E-02␣1.297E-02␣1.297E-02␣1.295E-02␣2.315E-02␣2.315E-02
␣1.561E-02␣1.561E-02␣1.145E-02␣1.145E-02␣1.222E-02␣1.770E-02␣1.770E-02
␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣1.1␣␣␣␣␣0.005␣␣␣␣␣␣␣0.01RM␣01sep09MGA␣␣␣T
␣␣␣␣0

09/20/2010

C␣␣␣2␣␣␣␣3␣␣␣␣2␣␣␣-1␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣306.25␣␣␣␣␣-9
FFF␣0␣␣␣␣0␣390.00000␣␣␣␣g␣0.61␣␣␣a␣0.24␣01␣F␣T␣F␣F
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␣␣␣␣7␣␣␣␣0␣␣␣␣0␣␣␣␣0
␣1.000E+00Boundary␣Layer
␣0.340␣1.4156␣0.0853␣0.742␣0.360␣1.3001␣0.0777␣0.738␣0.400␣1.2585␣0.0738␣0.732
␣0.500␣1.1091␣0.0628␣0.726␣0.675␣0.8490␣0.0478␣0.713␣0.870␣0.6793␣0.0374␣0.686
␣1.020␣0.5907␣0.0326␣0.702

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␣␣␣12␣␣␣␣1␣␣263␣␣␣␣0
-152.61412␣␣37.08490␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000
␣␣␣29␣␣␣␣7
␣␣␣␣␣␣␣0.0␣␣␣␣␣␣␣0.2␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣0.6␣␣␣␣␣␣␣0.8␣␣␣␣␣␣␣1.0␣␣␣␣␣␣␣1.5␣␣␣␣␣␣␣␣␣2
␣␣␣␣␣␣␣␣␣3␣␣␣␣␣␣␣␣4␣␣␣␣␣␣␣␣␣5␣␣␣␣␣␣␣␣10␣␣␣␣␣␣␣␣20␣␣␣␣␣␣␣␣30␣␣␣␣␣␣␣␣40␣␣␣␣␣␣␣␣50
␣␣␣␣␣␣␣␣60␣␣␣␣␣␣␣␣70␣␣␣␣␣␣␣␣80␣␣␣␣␣␣␣␣90␣␣␣␣␣␣␣␣100␣␣␣␣␣␣␣␣110␣␣␣␣␣␣␣␣120␣␣␣␣␣␣␣␣130
␣␣␣␣␣␣␣␣140␣␣␣␣␣␣␣␣150␣␣␣␣␣␣␣␣160␣␣␣␣␣␣␣␣170␣␣␣␣␣␣␣␣180
␣␣␣␣␣␣0.340␣␣␣␣␣␣0.380␣␣␣␣␣␣0.400␣␣␣␣␣␣0.500␣␣␣␣␣␣0.675␣␣␣␣␣␣0.870␣␣␣␣␣␣1.020
␣1.440E+01␣␣1.155E-02␣␣7.159E+00␣␣1.083E-02␣␣9.846E-03␣␣6.193E+00␣␣7.112E-03
␣␣7.402E+00␣␣1.269E-02␣␣3.796E+00␣␣1.056E-02␣␣8.986E-03␣␣3.524E+00␣␣6.412E-03
␣␣3.915E+00␣␣1.148E-02␣␣2.670E+00␣␣9.389E-03␣␣7.711E-03␣␣2.532E+00␣␣8.264E-03
␣␣2.758E+00␣␣1.055E-02␣␣2.107E+00␣␣8.169E-03␣␣7.857E-03␣␣2.019E+00␣␣9.319E-03
␣␣2.181E+00␣␣9.628E-03␣␣1.768E+00␣␣8.021E-03␣␣9.247E-03␣␣1.706E+00␣␣8.717E-03
␣␣1.830E+00␣␣7.506E-03␣␣1.535E+00␣␣9.388E-03␣␣1.097E-02␣␣1.490E+00␣␣7.546E-03
␣␣1.590E+00␣␣5.841E-03␣␣1.365E+00␣␣1.105E-02␣␣1.175E-02␣␣1.328E+00␣␣7.770E-03
␣␣1.410E+00␣␣6.719E-03␣␣1.232E+00␣␣1.152E-02␣␣1.140E-02␣␣1.200E+00␣␣9.298E-03
␣␣1.270E+00␣␣9.276E-03␣␣1.030E+00␣␣1.086E-02␣␣1.115E-02␣␣1.004E+00␣␣1.027E-02
␣␣1.059E+00␣␣1.070E-02␣␣8.822E-01␣␣1.062E-02␣␣1.230E-02␣␣8.575E-01␣␣1.020E-02
␣␣9.047E-01␣␣1.058E-02␣␣7.658E-01␣␣1.632E-02␣␣1.938E-02␣␣7.425E-01␣␣1.441E-02
␣␣7.847E-01␣␣1.541E-02␣␣6.718E-01␣␣1.557E-02␣␣1.849E-02␣␣6.494E-01␣␣1.458E-02
␣␣6.885E-01␣␣1.662E-02␣␣5.940E-01␣␣1.543E-02␣␣1.765E-02␣␣5.723E-01␣␣1.575E-02
␣␣6.090E-01␣␣1.876E-02␣␣5.295E-01␣␣1.362E-02␣␣1.528E-02␣␣5.067E-01␣␣1.447E-02
␣␣5.388E-01␣␣1.718E-02␣␣4.234E-01␣␣1.174E-02␣␣1.322E-02␣␣3.971E-01␣␣1.226E-02
␣␣4.168E-01␣␣1.370E-02␣␣3.343E-01␣␣1.154E-02␣␣1.291E-02␣␣3.103E-01␣␣1.248E-02
␣␣3.158E-01␣␣1.292E-02␣␣2.583E-01␣␣1.275E-02␣␣1.392E-02␣␣2.467E-01␣␣1.531E-02
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␣␣8.582E-02␣␣8.582E-02␣␣7.061E-02␣␣7.061E-02␣␣7.243E-02␣␣6.235E-02␣␣6.235E-02
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␣␣4.250E-02␣␣4.250E-02␣␣3.175E-02␣␣3.175E-02␣␣3.873E-02␣␣4.691E-02␣␣4.691E-02
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␣␣7.402E+00␣␣1.269E-02␣␣3.796E+00␣␣1.056E-02␣␣8.986E-03␣␣3.524E+00␣␣6.412E-03
␣␣3.915E+00␣␣1.148E-02␣␣2.670E+00␣␣9.389E-03␣␣7.711E-03␣␣2.532E+00␣␣8.264E-03
␣␣2.758E+00␣␣1.055E-02␣␣2.107E+00␣␣8.169E-03␣␣7.857E-03␣␣2.019E+00␣␣9.319E-03

␣2.181E+00␣9.628E-03␣1.768E+00␣8.021E-03␣9.247E-03␣1.706E+00␣8.717E-03
␣1.830E+00␣7.506E-03␣1.535E+00␣9.388E-03␣1.097E-02␣1.490E+00␣7.546E-03
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␣1.410E+00␣6.719E-03␣1.232E+00␣1.152E-02␣1.140E-02␣1.200E+00␣9.298E-03
␣1.270E+00␣9.276E-03␣1.030E+00␣1.086E-02␣1.115E-02␣1.004E+00␣1.027E-02
␣1.059E+00␣1.070E-02␣8.822E-01␣1.062E-02␣1.230E-02␣8.575E-01␣1.020E-02
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␣1.440E+01␣1.155E-02␣7.159E+00␣1.083E-02␣9.846E-03␣6.193E+00␣7.112E-03
␣7.402E+00␣1.269E-02␣3.796E+00␣1.056E-02␣8.986E-03␣3.524E+00␣6.412E-03
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␣1.410E+00␣6.719E-03␣1.232E+00␣1.152E-02␣1.140E-02␣1.200E+00␣9.298E-03
␣1.270E+00␣9.276E-03␣1.030E+00␣1.086E-02␣1.115E-02␣1.004E+00␣1.027E-02
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␣7.402E+00␣1.269E-02␣3.796E+00␣1.056E-02␣8.986E-03␣3.524E+00␣6.412E-03
␣3.915E+00␣1.148E-02␣2.670E+00␣9.389E-03␣7.711E-03␣2.532E+00␣8.264E-03
␣2.758E+00␣1.055E-02␣2.107E+00␣8.169E-03␣7.857E-03␣2.019E+00␣9.319E-03
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␣1.410E+00␣6.719E-03␣1.232E+00␣1.152E-02␣1.140E-02␣1.200E+00␣9.298E-03
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␣1.496E-02␣1.496E-02␣1.248E-02␣1.248E-02␣1.227E-02␣2.146E-02␣2.146E-02
␣1.513E-02␣1.513E-02␣1.082E-02␣1.082E-02␣1.170E-02␣1.667E-02␣1.667E-02
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␣␣␣␣0

08/22/2011

C␣␣␣2␣␣␣␣3␣␣␣␣2␣␣␣-1␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣306.25␣␣␣␣-10
FFF␣0␣␣␣␣0␣390.00000␣␣␣␣g␣1.08␣␣␣a␣0.23␣01␣F␣T␣F␣F
DATA/Filter/ASTER_vnir.flt
␣␣␣␣7␣␣␣␣0USS␣0␣␣␣10␣␣␣␣0␣␣␣␣0␣␣␣␣␣␣␣␣81.96890␣␣0.0␣␣␣␣␣␣␣␣0.0␣␣␣␣␣␣␣.000␣␣␣␣␣0.793
␣␣␣␣7␣␣␣␣0␣␣␣␣0␣␣␣␣0
␣1.000E+00Boundary␣Layer
␣0.340␣1.7639␣0.0670␣0.722␣0.360␣1.5527␣0.0601␣0.715␣0.400␣1.4578␣0.0557␣0.703
␣0.500␣1.1692␣0.0454␣0.694␣0.675␣0.7470␣0.0317␣0.664␣0.870␣0.5179␣0.0232␣0.614
␣1.020␣0.4052␣0.0195␣0.631
␣␣␣705.000␣␣␣␣␣␣.000␣␣␣180.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣0
␣␣␣12␣␣␣␣1␣␣234␣␣␣␣0
-139.60342␣␣28.72055␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000
␣␣␣29␣␣␣␣7
␣␣␣␣␣␣␣0.0␣␣␣␣␣␣␣0.2␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣0.6␣␣␣␣␣␣␣0.8␣␣␣␣␣␣␣1.0␣␣␣␣␣␣␣1.5␣␣␣␣␣␣␣␣␣2
␣␣␣␣␣␣␣␣␣3␣␣␣␣␣␣␣␣4␣␣␣␣␣␣␣␣␣5␣␣␣␣␣␣␣␣10␣␣␣␣␣␣␣␣20␣␣␣␣␣␣␣␣30␣␣␣␣␣␣␣␣40␣␣␣␣␣␣␣␣50
␣␣␣␣␣␣␣␣60␣␣␣␣␣␣␣␣70␣␣␣␣␣␣␣␣80␣␣␣␣␣␣␣␣90␣␣␣␣␣␣␣␣100␣␣␣␣␣␣␣␣110␣␣␣␣␣␣␣␣120␣␣␣␣␣␣␣␣130
␣␣␣␣␣␣␣␣140␣␣␣␣␣␣␣␣150␣␣␣␣␣␣␣␣160␣␣␣␣␣␣␣␣170␣␣␣␣␣␣␣␣180
␣␣␣␣␣␣0.340␣␣␣␣␣␣0.380␣␣␣␣␣␣0.400␣␣␣␣␣␣0.500␣␣␣␣␣␣0.675␣␣␣␣␣␣0.870␣␣␣␣␣␣1.020
␣2.777E+00␣1.388E-02␣2.067E+00␣1.307E-02␣1.189E-02␣1.805E+00␣8.235E-03
␣2.196E+00␣1.449E-02␣1.676E+00␣1.252E-02␣1.099E-02␣1.500E+00␣7.527E-03
␣1.778E+00␣1.348E-02␣1.478E+00␣1.131E-02␣9.992E-03␣1.333E+00␣8.639E-03
␣1.566E+00␣1.214E-02␣1.347E+00␣1.033E-02␣1.009E-02␣1.220E+00␣9.341E-03
␣1.425E+00␣1.090E-02␣1.248E+00␣1.009E-02␣1.109E-02␣1.134E+00␣9.162E-03
␣1.317E+00␣9.054E-03␣1.167E+00␣1.088E-02␣1.237E-02␣1.062E+00␣8.654E-03
␣1.230E+00␣7.690E-03␣1.098E+00␣1.192E-02␣1.312E-02␣1.000E+00␣8.854E-03
␣1.153E+00␣8.039E-03␣1.035E+00␣1.225E-02␣1.316E-02␣9.446E-01␣9.780E-03
␣1.086E+00␣9.578E-03␣9.281E-01␣1.186E-02␣1.316E-02␣8.460E-01␣1.052E-02
␣9.687E-01␣1.062E-02␣8.348E-01␣1.163E-02␣1.391E-02␣7.604E-01␣1.075E-02
␣8.680E-01␣1.080E-02␣7.521E-01␣1.374E-02␣1.698E-02␣6.849E-01␣1.236E-02
␣7.799E-01␣1.277E-02␣6.784E-01␣1.373E-02␣1.707E-02␣6.180E-01␣1.294E-02
␣7.019E-01␣1.394E-02␣6.125E-01␣1.368E-02␣1.672E-02␣5.583E-01␣1.371E-02
␣6.318E-01␣1.525E-02␣5.533E-01␣1.278E-02␣1.547E-02␣5.043E-01␣1.330E-02
␣5.675E-01␣1.454E-02␣4.502E-01␣1.194E-02␣1.445E-02␣4.105E-01␣1.252E-02
␣4.526E-01␣1.288E-02␣3.620E-01␣1.213E-02␣1.452E-02␣3.333E-01␣1.303E-02
␣3.554E-01␣1.280E-02␣2.868E-01␣1.309E-02␣1.532E-02␣2.725E-01␣1.474E-02
␣2.797E-01␣1.456E-02␣2.253E-01␣1.344E-02␣1.557E-02␣2.257E-01␣1.558E-02
␣2.271E-01␣1.554E-02␣1.796E-01␣1.796E-01␣1.719E-01␣1.875E-01␣1.875E-01
␣1.882E-01␣1.882E-01␣1.462E-01␣1.462E-01␣1.390E-01␣1.530E-01␣1.530E-01
␣1.543E-01␣1.543E-01␣1.202E-01␣1.202E-01␣1.164E-01␣1.217E-01␣1.217E-01

␣1.220E-01␣1.220E-01␣9.756E-02␣9.756E-02␣9.813E-02␣9.695E-02␣9.695E-02
␣9.185E-02␣9.185E-02␣7.636E-02␣7.636E-02␣8.069E-02␣7.970E-02␣7.970E-02
␣6.600E-02␣6.600E-02␣5.698E-02␣5.698E-02␣6.395E-02␣6.846E-02␣6.846E-02
␣4.601E-02␣4.601E-02␣3.524E-02␣3.524E-02␣4.328E-02␣5.716E-02␣5.716E-02
␣2.753E-02␣2.753E-02␣2.387E-02␣2.387E-02␣2.908E-02␣4.672E-02␣4.672E-02
␣1.939E-02␣1.939E-02␣1.801E-02␣1.801E-02␣1.951E-02␣3.554E-02␣3.554E-02
␣1.648E-02␣1.648E-02␣1.396E-02␣1.396E-02␣1.436E-02␣2.622E-02␣2.622E-02
␣1.642E-02␣1.642E-02␣1.270E-02␣1.270E-02␣1.329E-02␣1.962E-02␣1.962E-02
␣2.777E+00␣1.388E-02␣2.067E+00␣1.307E-02␣1.189E-02␣1.805E+00␣8.235E-03
␣2.196E+00␣1.449E-02␣1.676E+00␣1.252E-02␣1.099E-02␣1.500E+00␣7.527E-03
␣1.778E+00␣1.348E-02␣1.478E+00␣1.131E-02␣9.992E-03␣1.333E+00␣8.639E-03
␣1.566E+00␣1.214E-02␣1.347E+00␣1.033E-02␣1.009E-02␣1.220E+00␣9.341E-03
␣1.425E+00␣1.090E-02␣1.248E+00␣1.009E-02␣1.109E-02␣1.134E+00␣9.162E-03
␣1.317E+00␣9.054E-03␣1.167E+00␣1.088E-02␣1.237E-02␣1.062E+00␣8.654E-03
␣1.230E+00␣7.690E-03␣1.098E+00␣1.192E-02␣1.312E-02␣1.000E+00␣8.854E-03
␣1.153E+00␣8.039E-03␣1.035E+00␣1.225E-02␣1.316E-02␣9.446E-01␣9.780E-03
␣1.086E+00␣9.578E-03␣9.281E-01␣1.186E-02␣1.316E-02␣8.460E-01␣1.052E-02
␣9.687E-01␣1.062E-02␣8.348E-01␣1.163E-02␣1.391E-02␣7.604E-01␣1.075E-02
␣8.680E-01␣1.080E-02␣7.521E-01␣1.374E-02␣1.698E-02␣6.849E-01␣1.236E-02
␣7.799E-01␣1.277E-02␣6.784E-01␣1.373E-02␣1.707E-02␣6.180E-01␣1.294E-02
␣7.019E-01␣1.394E-02␣6.125E-01␣1.368E-02␣1.672E-02␣5.583E-01␣1.371E-02
␣6.318E-01␣1.525E-02␣5.533E-01␣1.278E-02␣1.547E-02␣5.043E-01␣1.330E-02
␣5.675E-01␣1.454E-02␣4.502E-01␣1.194E-02␣1.445E-02␣4.105E-01␣1.252E-02
␣4.526E-01␣1.288E-02␣3.620E-01␣1.213E-02␣1.452E-02␣3.333E-01␣1.303E-02
␣3.554E-01␣1.280E-02␣2.868E-01␣1.309E-02␣1.532E-02␣2.725E-01␣1.474E-02
␣2.797E-01␣1.456E-02␣2.253E-01␣1.344E-02␣1.557E-02␣2.257E-01␣1.558E-02
␣2.271E-01␣1.554E-02␣1.796E-01␣1.796E-01␣1.719E-01␣1.875E-01␣1.875E-01
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␣1.220E-01␣1.220E-01␣9.756E-02␣9.756E-02␣9.813E-02␣9.695E-02␣9.695E-02
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␣1.648E-02␣1.648E-02␣1.396E-02␣1.396E-02␣1.436E-02␣2.622E-02␣2.622E-02
␣1.642E-02␣1.642E-02␣1.270E-02␣1.270E-02␣1.329E-02␣1.962E-02␣1.962E-02
␣2.777E+00␣1.388E-02␣2.067E+00␣1.307E-02␣1.189E-02␣1.805E+00␣8.235E-03
␣2.196E+00␣1.449E-02␣1.676E+00␣1.252E-02␣1.099E-02␣1.500E+00␣7.527E-03
␣1.778E+00␣1.348E-02␣1.478E+00␣1.131E-02␣9.992E-03␣1.333E+00␣8.639E-03
␣1.566E+00␣1.214E-02␣1.347E+00␣1.033E-02␣1.009E-02␣1.220E+00␣9.341E-03
␣1.425E+00␣1.090E-02␣1.248E+00␣1.009E-02␣1.109E-02␣1.134E+00␣9.162E-03

␣1.317E+00␣9.054E-03␣1.167E+00␣1.088E-02␣1.237E-02␣1.062E+00␣8.654E-03
␣1.230E+00␣7.690E-03␣1.098E+00␣1.192E-02␣1.312E-02␣1.000E+00␣8.854E-03
␣1.153E+00␣8.039E-03␣1.035E+00␣1.225E-02␣1.316E-02␣9.446E-01␣9.780E-03
␣1.086E+00␣9.578E-03␣9.281E-01␣1.186E-02␣1.316E-02␣8.460E-01␣1.052E-02
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␣1.220E-01␣1.220E-01␣9.756E-02␣9.756E-02␣9.813E-02␣9.695E-02␣9.695E-02
␣9.185E-02␣9.185E-02␣7.636E-02␣7.636E-02␣8.069E-02␣7.970E-02␣7.970E-02
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␣1.939E-02␣1.939E-02␣1.801E-02␣1.801E-02␣1.951E-02␣3.554E-02␣3.554E-02
␣1.648E-02␣1.648E-02␣1.396E-02␣1.396E-02␣1.436E-02␣2.622E-02␣2.622E-02
␣1.642E-02␣1.642E-02␣1.270E-02␣1.270E-02␣1.329E-02␣1.962E-02␣1.962E-02
␣2.777E+00␣1.388E-02␣2.067E+00␣1.307E-02␣1.189E-02␣1.805E+00␣8.235E-03
␣2.196E+00␣1.449E-02␣1.676E+00␣1.252E-02␣1.099E-02␣1.500E+00␣7.527E-03
␣1.778E+00␣1.348E-02␣1.478E+00␣1.131E-02␣9.992E-03␣1.333E+00␣8.639E-03
␣1.566E+00␣1.214E-02␣1.347E+00␣1.033E-02␣1.009E-02␣1.220E+00␣9.341E-03
␣1.425E+00␣1.090E-02␣1.248E+00␣1.009E-02␣1.109E-02␣1.134E+00␣9.162E-03
␣1.317E+00␣9.054E-03␣1.167E+00␣1.088E-02␣1.237E-02␣1.062E+00␣8.654E-03
␣1.230E+00␣7.690E-03␣1.098E+00␣1.192E-02␣1.312E-02␣1.000E+00␣8.854E-03
␣1.153E+00␣8.039E-03␣1.035E+00␣1.225E-02␣1.316E-02␣9.446E-01␣9.780E-03
␣1.086E+00␣9.578E-03␣9.281E-01␣1.186E-02␣1.316E-02␣8.460E-01␣1.052E-02
␣9.687E-01␣1.062E-02␣8.348E-01␣1.163E-02␣1.391E-02␣7.604E-01␣1.075E-02
␣8.680E-01␣1.080E-02␣7.521E-01␣1.374E-02␣1.698E-02␣6.849E-01␣1.236E-02
␣7.799E-01␣1.277E-02␣6.784E-01␣1.373E-02␣1.707E-02␣6.180E-01␣1.294E-02
␣7.019E-01␣1.394E-02␣6.125E-01␣1.368E-02␣1.672E-02␣5.583E-01␣1.371E-02
␣6.318E-01␣1.525E-02␣5.533E-01␣1.278E-02␣1.547E-02␣5.043E-01␣1.330E-02
␣5.675E-01␣1.454E-02␣4.502E-01␣1.194E-02␣1.445E-02␣4.105E-01␣1.252E-02
␣4.526E-01␣1.288E-02␣3.620E-01␣1.213E-02␣1.452E-02␣3.333E-01␣1.303E-02
␣3.554E-01␣1.280E-02␣2.868E-01␣1.309E-02␣1.532E-02␣2.725E-01␣1.474E-02
␣2.797E-01␣1.456E-02␣2.253E-01␣1.344E-02␣1.557E-02␣2.257E-01␣1.558E-02

␣2.271E-01␣1.554E-02␣1.796E-01␣1.796E-01␣1.719E-01␣1.875E-01␣1.875E-01
␣1.882E-01␣1.882E-01␣1.462E-01␣1.462E-01␣1.390E-01␣1.530E-01␣1.530E-01
␣1.543E-01␣1.543E-01␣1.202E-01␣1.202E-01␣1.164E-01␣1.217E-01␣1.217E-01
␣1.220E-01␣1.220E-01␣9.756E-02␣9.756E-02␣9.813E-02␣9.695E-02␣9.695E-02
␣9.185E-02␣9.185E-02␣7.636E-02␣7.636E-02␣8.069E-02␣7.970E-02␣7.970E-02
␣6.600E-02␣6.600E-02␣5.698E-02␣5.698E-02␣6.395E-02␣6.846E-02␣6.846E-02
␣4.601E-02␣4.601E-02␣3.524E-02␣3.524E-02␣4.328E-02␣5.716E-02␣5.716E-02
␣2.753E-02␣2.753E-02␣2.387E-02␣2.387E-02␣2.908E-02␣4.672E-02␣4.672E-02
␣1.939E-02␣1.939E-02␣1.801E-02␣1.801E-02␣1.951E-02␣3.554E-02␣3.554E-02
␣1.648E-02␣1.648E-02␣1.396E-02␣1.396E-02␣1.436E-02␣2.622E-02␣2.622E-02
␣1.642E-02␣1.642E-02␣1.270E-02␣1.270E-02␣1.329E-02␣1.962E-02␣1.962E-02
␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣1.1␣␣␣␣␣0.005␣␣␣␣␣␣␣0.01RM␣22aug11MGA␣␣␣T
␣␣␣␣0

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C␣␣␣2␣␣␣␣3␣␣␣␣2␣␣␣-1␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣306.25␣␣␣␣-11
FFF␣0␣␣␣␣0␣390.00000␣␣␣␣g␣1.54␣␣␣a␣0.23␣01␣F␣T␣F␣F
DATA/Filter/ASTER_vnir.flt
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␣␣␣␣7␣␣␣␣0␣␣␣␣0␣␣␣␣0
␣1.000E+00Boundary␣Layer
␣0.340␣1.9066␣0.0660␣0.715␣0.360␣1.6528␣0.0590␣0.706␣0.400␣1.5362␣0.0544␣0.693
␣0.500␣1.1907␣0.0437␣0.681␣0.675␣0.7121␣0.0298␣0.643␣0.870␣0.4681␣0.0214␣0.581
␣1.020␣0.3520␣0.0179␣0.595
␣␣␣705.000␣␣␣␣␣␣.000␣␣␣180.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣0
␣␣␣12␣␣␣␣1␣␣253␣␣␣␣0
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␣␣␣29␣␣␣␣7
␣␣␣␣␣␣␣0.0␣␣␣␣␣␣␣0.2␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣0.6␣␣␣␣␣␣␣0.8␣␣␣␣␣␣␣1.0␣␣␣␣␣␣␣1.5␣␣␣␣␣␣␣␣␣2
␣␣␣␣␣␣␣␣␣3␣␣␣␣␣␣␣␣4␣␣␣␣␣␣␣␣␣5␣␣␣␣␣␣␣␣10␣␣␣␣␣␣␣␣20␣␣␣␣␣␣␣␣30␣␣␣␣␣␣␣␣40␣␣␣␣␣␣␣␣50
␣␣␣␣␣␣␣␣60␣␣␣␣␣␣␣␣70␣␣␣␣␣␣␣␣80␣␣␣␣␣␣␣␣90␣␣␣␣␣␣␣100␣␣␣␣␣␣␣110␣␣␣␣␣␣␣120␣␣␣␣␣␣␣130
␣␣␣␣␣␣␣140␣␣␣␣␣␣␣150␣␣␣␣␣␣␣160␣␣␣␣␣␣␣170␣␣␣␣␣␣␣180
␣␣␣␣␣0.340␣␣␣␣␣0.380␣␣␣␣␣0.400␣␣␣␣␣0.500␣␣␣␣␣0.675␣␣␣␣␣0.870␣␣␣␣␣1.020
␣1.817E+00␣1.475E-02␣1.505E+00␣1.386E-02␣1.264E-02␣1.298E+00␣8.783E-03
␣1.611E+00␣1.513E-02␣1.344E+00␣1.326E-02␣1.179E-02␣1.174E+00␣8.016E-03
␣1.436E+00␣1.416E-02␣1.246E+00␣1.207E-02␣1.092E-02␣1.094E+00␣8.835E-03
␣1.329E+00␣1.272E-02␣1.172E+00␣1.118E-02␣1.101E-02␣1.032E+00␣9.411E-03
␣1.248E+00␣1.143E-02␣1.111E+00␣1.091E-02␣1.183E-02␣9.808E-01␣9.362E-03
␣1.180E+00␣9.720E-03␣1.058E+00␣1.147E-02␣1.293E-02␣9.348E-01␣9.076E-03
␣1.121E+00␣8.462E-03␣1.009E+00␣1.226E-02␣1.364E-02␣8.925E-01␣9.304E-03
␣1.067E+00␣8.619E-03␣9.636E-01␣1.253E-02␣1.377E-02␣8.527E-01␣1.008E-02
␣1.016E+00␣9.785E-03␣8.798E-01␣1.223E-02␣1.386E-02␣7.788E-01␣1.075E-02

␣9.237E-01␣1.065E-02␣8.028E-01␣1.203E-02␣1.449E-02␣7.111E-01␣1.108E-02
␣8.396E-01␣1.088E-02␣7.319E-01␣1.337E-02␣1.665E-02␣6.490E-01␣1.223E-02
␣7.630E-01␣1.226E-02␣6.664E-01␣1.344E-02␣1.688E-02␣5.921E-01␣1.284E-02
␣6.927E-01␣1.328E-02␣6.062E-01␣1.343E-02␣1.668E-02␣5.400E-01␣1.351E-02
␣6.280E-01␣1.432E-02␣5.510E-01␣1.282E-02␣1.582E-02␣4.921E-01␣1.338E-02
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␣2.362E-01␣1.516E-02␣1.878E-01␣1.878E-01␣1.807E-01␣1.930E-01␣1.930E-01
␣1.941E-01␣1.941E-01␣1.525E-01␣1.525E-01␣1.466E-01␣1.587E-01␣1.587E-01
␣1.578E-01␣1.578E-01␣1.245E-01␣1.245E-01␣1.220E-01␣1.283E-01␣1.283E-01
␣1.240E-01␣1.240E-01␣1.001E-01␣1.001E-01␣1.018E-01␣1.040E-01␣1.040E-01
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␣6.730E-02␣6.730E-02␣5.833E-02␣5.833E-02␣6.581E-02␣7.404E-02␣7.404E-02
␣4.729E-02␣4.729E-02␣3.646E-02␣3.646E-02␣4.465E-02␣6.090E-02␣6.090E-02
␣2.858E-02␣2.858E-02␣2.457E-02␣2.457E-02␣3.004E-02␣4.924E-02␣4.924E-02
␣2.015E-02␣2.015E-02␣1.845E-02␣1.845E-02␣2.040E-02␣3.757E-02␣3.757E-02
␣1.718E-02␣1.718E-02␣1.464E-02␣1.464E-02␣1.527E-02␣2.781E-02␣2.781E-02
␣1.693E-02␣1.693E-02␣1.348E-02␣1.348E-02␣1.399E-02␣2.067E-02␣2.067E-02
␣1.817E+00␣1.475E-02␣1.505E+00␣1.386E-02␣1.264E-02␣1.298E+00␣8.783E-03
␣1.611E+00␣1.513E-02␣1.344E+00␣1.326E-02␣1.179E-02␣1.174E+00␣8.016E-03
␣1.436E+00␣1.416E-02␣1.246E+00␣1.207E-02␣1.092E-02␣1.094E+00␣8.835E-03
␣1.329E+00␣1.272E-02␣1.172E+00␣1.118E-02␣1.101E-02␣1.032E+00␣9.411E-03
␣1.248E+00␣1.143E-02␣1.111E+00␣1.091E-02␣1.183E-02␣9.808E-01␣9.362E-03
␣1.180E+00␣9.720E-03␣1.058E+00␣1.147E-02␣1.293E-02␣9.348E-01␣9.076E-03
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␣1.067E+00␣8.619E-03␣9.636E-01␣1.253E-02␣1.377E-02␣8.527E-01␣1.008E-02
␣1.016E+00␣9.785E-03␣8.798E-01␣1.223E-02␣1.386E-02␣7.788E-01␣1.075E-02
␣9.237E-01␣1.065E-02␣8.028E-01␣1.203E-02␣1.449E-02␣7.111E-01␣1.108E-02
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␣4.729E-02␣4.729E-02␣3.646E-02␣3.646E-02␣4.465E-02␣6.090E-02␣6.090E-02
␣2.858E-02␣2.858E-02␣2.457E-02␣2.457E-02␣3.004E-02␣4.924E-02␣4.924E-02
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␣1.718E-02␣1.718E-02␣1.464E-02␣1.464E-02␣1.527E-02␣2.781E-02␣2.781E-02
␣1.693E-02␣1.693E-02␣1.348E-02␣1.348E-02␣1.399E-02␣2.067E-02␣2.067E-02
␣1.817E+00␣1.475E-02␣1.505E+00␣1.386E-02␣1.264E-02␣1.298E+00␣8.783E-03
␣1.611E+00␣1.513E-02␣1.344E+00␣1.326E-02␣1.179E-02␣1.174E+00␣8.016E-03
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␣1.329E+00␣1.272E-02␣1.172E+00␣1.118E-02␣1.101E-02␣1.032E+00␣9.411E-03
␣1.248E+00␣1.143E-02␣1.111E+00␣1.091E-02␣1.183E-02␣9.808E-01␣9.362E-03
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␣1.121E+00␣8.462E-03␣1.009E+00␣1.226E-02␣1.364E-02␣8.925E-01␣9.304E-03
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␣7.630E-01␣1.226E-02␣6.664E-01␣1.344E-02␣1.688E-02␣5.921E-01␣1.284E-02
␣6.927E-01␣1.328E-02␣6.062E-01␣1.343E-02␣1.668E-02␣5.400E-01␣1.351E-02
␣6.280E-01␣1.432E-02␣5.510E-01␣1.282E-02␣1.582E-02␣4.921E-01␣1.338E-02
␣5.677E-01␣1.390E-02␣4.525E-01␣1.230E-02␣1.517E-02␣4.071E-01␣1.301E-02
␣4.584E-01␣1.281E-02␣3.673E-01␣1.257E-02␣1.533E-02␣3.356E-01␣1.355E-02
␣3.650E-01␣1.291E-02␣2.943E-01␣1.341E-02␣1.603E-02␣2.777E-01␣1.490E-02
␣2.908E-01␣1.436E-02␣2.341E-01␣1.375E-02␣1.628E-02␣2.315E-01␣1.556E-02
␣2.362E-01␣1.516E-02␣1.878E-01␣1.878E-01␣1.807E-01␣1.930E-01␣1.930E-01
␣1.941E-01␣1.941E-01␣1.525E-01␣1.525E-01␣1.466E-01␣1.587E-01␣1.587E-01
␣1.578E-01␣1.578E-01␣1.245E-01␣1.245E-01␣1.220E-01␣1.283E-01␣1.283E-01
␣1.240E-01␣1.240E-01␣1.001E-01␣1.001E-01␣1.018E-01␣1.040E-01␣1.040E-01
␣9.326E-02␣9.326E-02␣7.798E-02␣7.798E-02␣8.311E-02␣8.632E-02␣8.632E-02
␣6.730E-02␣6.730E-02␣5.833E-02␣5.833E-02␣6.581E-02␣7.404E-02␣7.404E-02
␣4.729E-02␣4.729E-02␣3.646E-02␣3.646E-02␣4.465E-02␣6.090E-02␣6.090E-02
␣2.858E-02␣2.858E-02␣2.457E-02␣2.457E-02␣3.004E-02␣4.924E-02␣4.924E-02
␣2.015E-02␣2.015E-02␣1.845E-02␣1.845E-02␣2.040E-02␣3.757E-02␣3.757E-02
␣1.718E-02␣1.718E-02␣1.464E-02␣1.464E-02␣1.527E-02␣2.781E-02␣2.781E-02
␣1.693E-02␣1.693E-02␣1.348E-02␣1.348E-02␣1.399E-02␣2.067E-02␣2.067E-02
␣1.817E+00␣1.475E-02␣1.505E+00␣1.386E-02␣1.264E-02␣1.298E+00␣8.783E-03
␣1.611E+00␣1.513E-02␣1.344E+00␣1.326E-02␣1.179E-02␣1.174E+00␣8.016E-03
␣1.436E+00␣1.416E-02␣1.246E+00␣1.207E-02␣1.092E-02␣1.094E+00␣8.835E-03
␣1.329E+00␣1.272E-02␣1.172E+00␣1.118E-02␣1.101E-02␣1.032E+00␣9.411E-03
␣1.248E+00␣1.143E-02␣1.111E+00␣1.091E-02␣1.183E-02␣9.808E-01␣9.362E-03
␣1.180E+00␣9.720E-03␣1.058E+00␣1.147E-02␣1.293E-02␣9.348E-01␣9.076E-03

␣1.121E+00␣8.462E-03␣1.009E+00␣1.226E-02␣1.364E-02␣8.925E-01␣9.304E-03
␣1.067E+00␣8.619E-03␣9.636E-01␣1.253E-02␣1.377E-02␣8.527E-01␣1.008E-02
␣1.016E+00␣9.785E-03␣8.798E-01␣1.223E-02␣1.386E-02␣7.788E-01␣1.075E-02
␣9.237E-01␣1.065E-02␣8.028E-01␣1.203E-02␣1.449E-02␣7.111E-01␣1.108E-02
␣8.396E-01␣1.088E-02␣7.319E-01␣1.337E-02␣1.665E-02␣6.490E-01␣1.223E-02
␣7.630E-01␣1.226E-02␣6.664E-01␣1.344E-02␣1.688E-02␣5.921E-01␣1.284E-02
␣6.927E-01␣1.328E-02␣6.062E-01␣1.343E-02␣1.668E-02␣5.400E-01␣1.351E-02
␣6.280E-01␣1.432E-02␣5.510E-01␣1.282E-02␣1.582E-02␣4.921E-01␣1.338E-02
␣5.677E-01␣1.390E-02␣4.525E-01␣1.230E-02␣1.517E-02␣4.071E-01␣1.301E-02
␣4.584E-01␣1.281E-02␣3.673E-01␣1.257E-02␣1.533E-02␣3.356E-01␣1.355E-02
␣3.650E-01␣1.291E-02␣2.943E-01␣1.341E-02␣1.603E-02␣2.777E-01␣1.490E-02
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␣2.362E-01␣1.516E-02␣1.878E-01␣1.878E-01␣1.807E-01␣1.930E-01␣1.930E-01
␣1.941E-01␣1.941E-01␣1.525E-01␣1.525E-01␣1.466E-01␣1.587E-01␣1.587E-01
␣1.578E-01␣1.578E-01␣1.245E-01␣1.245E-01␣1.220E-01␣1.283E-01␣1.283E-01
␣1.240E-01␣1.240E-01␣1.001E-01␣1.001E-01␣1.018E-01␣1.040E-01␣1.040E-01
␣9.326E-02␣9.326E-02␣7.798E-02␣7.798E-02␣8.311E-02␣8.632E-02␣8.632E-02
␣6.730E-02␣6.730E-02␣5.833E-02␣5.833E-02␣6.581E-02␣7.404E-02␣7.404E-02
␣4.729E-02␣4.729E-02␣3.646E-02␣3.646E-02␣4.465E-02␣6.090E-02␣6.090E-02
␣2.858E-02␣2.858E-02␣2.457E-02␣2.457E-02␣3.004E-02␣4.924E-02␣4.924E-02
␣2.015E-02␣2.015E-02␣1.845E-02␣1.845E-02␣2.040E-02␣3.757E-02␣3.757E-02
␣1.718E-02␣1.718E-02␣1.464E-02␣1.464E-02␣1.527E-02␣2.781E-02␣2.781E-02
␣1.693E-02␣1.693E-02␣1.348E-02␣1.348E-02␣1.399E-02␣2.067E-02␣2.067E-02
␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣1.1␣␣␣␣␣0.005␣␣␣␣␣␣0.01RM␣09sep12MGA␣␣␣T
␣␣␣␣0

C.2 At Alkali Lake

12/16/2005

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C␣␣␣2␣␣␣␣3␣␣␣␣2␣␣␣-1␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣306.25␣␣␣␣-1
FFF␣0␣␣␣␣0␣390.00000␣␣␣␣g␣0.11␣␣␣a␣0.28␣01␣F␣T␣F␣F
DATA/Filter/ASTER_vnir.flt
␣␣␣␣7␣␣␣␣0USS␣0␣␣␣10␣␣␣␣0␣␣␣␣0␣␣␣␣␣␣␣96.75394␣␣0.0␣␣␣␣␣␣␣0.0␣␣␣␣␣␣.000␣␣␣␣␣1.496
␣␣␣␣7␣␣␣␣0␣␣␣␣0␣␣␣␣0
␣1.000E+00Boundary␣Layer
␣0.340␣1.4156␣0.0853␣0.742␣0.360␣1.3001␣0.0777␣0.738␣0.400␣1.2585␣0.0738␣0.732
␣0.500␣1.1091␣0.0628␣0.726␣0.675␣0.8490␣0.0478␣0.713␣0.870␣0.6793␣0.0374␣0.686
␣1.020␣0.5907␣0.0326␣0.702
␣␣␣705.000␣␣␣␣␣␣.000␣␣␣180.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣0
␣␣␣12␣␣␣␣1␣␣350␣␣␣␣0
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␣␣␣29␣␣␣␣7
␣␣␣␣␣␣␣␣0.0␣␣␣␣␣␣␣␣0.2␣␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣␣0.6␣␣␣␣␣␣␣␣0.8␣␣␣␣␣␣␣␣1.0␣␣␣␣␣␣␣␣1.5␣␣␣␣␣␣␣␣␣2
␣␣␣␣␣␣␣␣␣3␣␣␣␣␣␣␣␣4␣␣␣␣␣␣␣␣␣5␣␣␣␣␣␣␣␣10␣␣␣␣␣␣␣␣20␣␣␣␣␣␣␣␣30␣␣␣␣␣␣␣␣40␣␣␣␣␣␣␣␣50
␣␣␣␣␣␣␣␣60␣␣␣␣␣␣␣␣70␣␣␣␣␣␣␣␣80␣␣␣␣␣␣␣␣90␣␣␣␣␣␣␣␣100␣␣␣␣␣␣␣␣110␣␣␣␣␣␣␣␣120␣␣␣␣␣␣␣␣130
␣␣␣␣␣␣␣␣140␣␣␣␣␣␣␣␣150␣␣␣␣␣␣␣␣160␣␣␣␣␣␣␣␣170␣␣␣␣␣␣␣␣180
␣␣␣␣␣␣0.340␣␣␣␣␣␣0.380␣␣␣␣␣␣0.400␣␣␣␣␣␣0.500␣␣␣␣␣␣0.675␣␣␣␣␣␣0.870␣␣␣␣␣␣1.020
␣1.440E+01␣1.155E-02␣7.159E+00␣1.083E-02␣9.846E-03␣6.193E+00␣7.112E-03
␣7.402E+00␣1.269E-02␣3.796E+00␣1.056E-02␣8.986E-03␣3.524E+00␣6.412E-03
␣3.915E+00␣1.148E-02␣2.670E+00␣9.389E-03␣7.711E-03␣2.532E+00␣8.264E-03
␣2.758E+00␣1.055E-02␣2.107E+00␣8.169E-03␣7.857E-03␣2.019E+00␣9.319E-03
␣2.181E+00␣9.628E-03␣1.768E+00␣8.021E-03␣9.247E-03␣1.706E+00␣8.717E-03
␣1.830E+00␣7.506E-03␣1.535E+00␣9.388E-03␣1.097E-02␣1.490E+00␣7.546E-03
␣1.590E+00␣5.841E-03␣1.365E+00␣1.105E-02␣1.175E-02␣1.328E+00␣7.770E-03
␣1.410E+00␣6.719E-03␣1.232E+00␣1.152E-02␣1.140E-02␣1.200E+00␣9.298E-03
␣1.270E+00␣9.276E-03␣1.030E+00␣1.086E-02␣1.115E-02␣1.004E+00␣1.027E-02
␣1.059E+00␣1.070E-02␣8.822E-01␣1.062E-02␣1.230E-02␣8.575E-01␣1.020E-02
␣9.047E-01␣1.058E-02␣7.658E-01␣1.632E-02␣1.938E-02␣7.425E-01␣1.441E-02
␣7.847E-01␣1.541E-02␣6.718E-01␣1.557E-02␣1.849E-02␣6.494E-01␣1.458E-02
␣6.885E-01␣1.662E-02␣5.940E-01␣1.543E-02␣1.765E-02␣5.723E-01␣1.575E-02
␣6.090E-01␣1.876E-02␣5.295E-01␣1.362E-02␣1.528E-02␣5.067E-01␣1.447E-02
␣5.388E-01␣1.718E-02␣4.234E-01␣1.174E-02␣1.322E-02␣3.971E-01␣1.226E-02
␣4.168E-01␣1.370E-02␣3.343E-01␣1.154E-02␣1.291E-02␣3.103E-01␣1.248E-02
␣3.158E-01␣1.292E-02␣2.583E-01␣1.275E-02␣1.392E-02␣2.467E-01␣1.531E-02
␣2.391E-01␣1.556E-02␣1.954E-01␣1.296E-02␣1.396E-02␣2.020E-01␣1.658E-02
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␣6.147E-02␣6.147E-02␣5.252E-02␣5.252E-02␣5.745E-02␣5.378E-02␣5.378E-02
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␣2.542E-02␣2.542E-02␣2.226E-02␣2.226E-02␣2.631E-02␣3.936E-02␣3.936E-02
␣1.813E-02␣1.813E-02␣1.730E-02␣1.730E-02␣1.735E-02␣2.938E-02␣2.938E-02
␣1.496E-02␣1.496E-02␣1.248E-02␣1.248E-02␣1.227E-02␣2.146E-02␣2.146E-02
␣1.513E-02␣1.513E-02␣1.082E-02␣1.082E-02␣1.170E-02␣1.667E-02␣1.667E-02
␣1.440E+01␣1.155E-02␣7.159E+00␣1.083E-02␣9.846E-03␣6.193E+00␣7.112E-03
␣7.402E+00␣1.269E-02␣3.796E+00␣1.056E-02␣8.986E-03␣3.524E+00␣6.412E-03
␣3.915E+00␣1.148E-02␣2.670E+00␣9.389E-03␣7.711E-03␣2.532E+00␣8.264E-03
␣2.758E+00␣1.055E-02␣2.107E+00␣8.169E-03␣7.857E-03␣2.019E+00␣9.319E-03
␣2.181E+00␣9.628E-03␣1.768E+00␣8.021E-03␣9.247E-03␣1.706E+00␣8.717E-03
␣1.830E+00␣7.506E-03␣1.535E+00␣9.388E-03␣1.097E-02␣1.490E+00␣7.546E-03
␣1.590E+00␣5.841E-03␣1.365E+00␣1.105E-02␣1.175E-02␣1.328E+00␣7.770E-03
␣1.410E+00␣6.719E-03␣1.232E+00␣1.152E-02␣1.140E-02␣1.200E+00␣9.298E-03
␣1.270E+00␣9.276E-03␣1.030E+00␣1.086E-02␣1.115E-02␣1.004E+00␣1.027E-02
␣1.059E+00␣1.070E-02␣8.822E-01␣1.062E-02␣1.230E-02␣8.575E-01␣1.020E-02
␣9.047E-01␣1.058E-02␣7.658E-01␣1.632E-02␣1.938E-02␣7.425E-01␣1.441E-02
␣7.847E-01␣1.541E-02␣6.718E-01␣1.557E-02␣1.849E-02␣6.494E-01␣1.458E-02
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␣6.090E-01␣1.876E-02␣5.295E-01␣1.362E-02␣1.528E-02␣5.067E-01␣1.447E-02
␣5.388E-01␣1.718E-02␣4.234E-01␣1.174E-02␣1.322E-02␣3.971E-01␣1.226E-02
␣4.168E-01␣1.370E-02␣3.343E-01␣1.154E-02␣1.291E-02␣3.103E-01␣1.248E-02
␣3.158E-01␣1.292E-02␣2.583E-01␣1.275E-02␣1.392E-02␣2.467E-01␣1.531E-02
␣2.391E-01␣1.556E-02␣1.954E-01␣1.296E-02␣1.396E-02␣2.020E-01␣1.658E-02
␣1.946E-01␣1.690E-02␣1.530E-01␣1.530E-01␣1.446E-01␣1.689E-01␣1.689E-01
␣1.659E-01␣1.659E-01␣1.254E-01␣1.254E-01␣1.161E-01␣1.363E-01␣1.363E-01
␣1.405E-01␣1.405E-01␣1.057E-01␣1.057E-01␣9.968E-02␣1.040E-01␣1.040E-01
␣1.134E-01␣1.134E-01␣8.855E-02␣8.855E-02␣8.662E-02␣7.841E-02␣7.841E-02
␣8.582E-02␣8.582E-02␣7.061E-02␣7.061E-02␣7.243E-02␣6.235E-02␣6.235E-02
␣6.147E-02␣6.147E-02␣5.252E-02␣5.252E-02␣5.745E-02␣5.378E-02␣5.378E-02
␣4.250E-02␣4.250E-02␣3.175E-02␣3.175E-02␣3.873E-02␣4.691E-02␣4.691E-02
␣2.542E-02␣2.542E-02␣2.226E-02␣2.226E-02␣2.631E-02␣3.936E-02␣3.936E-02
␣1.813E-02␣1.813E-02␣1.730E-02␣1.730E-02␣1.735E-02␣2.938E-02␣2.938E-02
␣1.496E-02␣1.496E-02␣1.248E-02␣1.248E-02␣1.227E-02␣2.146E-02␣2.146E-02
␣1.513E-02␣1.513E-02␣1.082E-02␣1.082E-02␣1.170E-02␣1.667E-02␣1.667E-02
␣1.440E+01␣1.155E-02␣7.159E+00␣1.083E-02␣9.846E-03␣6.193E+00␣7.112E-03
␣7.402E+00␣1.269E-02␣3.796E+00␣1.056E-02␣8.986E-03␣3.524E+00␣6.412E-03
␣3.915E+00␣1.148E-02␣2.670E+00␣9.389E-03␣7.711E-03␣2.532E+00␣8.264E-03
␣2.758E+00␣1.055E-02␣2.107E+00␣8.169E-03␣7.857E-03␣2.019E+00␣9.319E-03
␣2.181E+00␣9.628E-03␣1.768E+00␣8.021E-03␣9.247E-03␣1.706E+00␣8.717E-03

␣1.830E+00␣7.506E-03␣1.535E+00␣9.388E-03␣1.097E-02␣1.490E+00␣7.546E-03
␣1.590E+00␣5.841E-03␣1.365E+00␣1.105E-02␣1.175E-02␣1.328E+00␣7.770E-03
␣1.410E+00␣6.719E-03␣1.232E+00␣1.152E-02␣1.140E-02␣1.200E+00␣9.298E-03
␣1.270E+00␣9.276E-03␣1.030E+00␣1.086E-02␣1.115E-02␣1.004E+00␣1.027E-02
␣1.059E+00␣1.070E-02␣8.822E-01␣1.062E-02␣1.230E-02␣8.575E-01␣1.020E-02
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␣6.885E-01␣1.662E-02␣5.940E-01␣1.543E-02␣1.765E-02␣5.723E-01␣1.575E-02
␣6.090E-01␣1.876E-02␣5.295E-01␣1.362E-02␣1.528E-02␣5.067E-01␣1.447E-02
␣5.388E-01␣1.718E-02␣4.234E-01␣1.174E-02␣1.322E-02␣3.971E-01␣1.226E-02
␣4.168E-01␣1.370E-02␣3.343E-01␣1.154E-02␣1.291E-02␣3.103E-01␣1.248E-02
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␣4.250E-02␣4.250E-02␣3.175E-02␣3.175E-02␣3.873E-02␣4.691E-02␣4.691E-02
␣2.542E-02␣2.542E-02␣2.226E-02␣2.226E-02␣2.631E-02␣3.936E-02␣3.936E-02
␣1.813E-02␣1.813E-02␣1.730E-02␣1.730E-02␣1.735E-02␣2.938E-02␣2.938E-02
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␣1.440E+01␣1.155E-02␣7.159E+00␣1.083E-02␣9.846E-03␣6.193E+00␣7.112E-03
␣7.402E+00␣1.269E-02␣3.796E+00␣1.056E-02␣8.986E-03␣3.524E+00␣6.412E-03
␣3.915E+00␣1.148E-02␣2.670E+00␣9.389E-03␣7.711E-03␣2.532E+00␣8.264E-03
␣2.758E+00␣1.055E-02␣2.107E+00␣8.169E-03␣7.857E-03␣2.019E+00␣9.319E-03
␣2.181E+00␣9.628E-03␣1.768E+00␣8.021E-03␣9.247E-03␣1.706E+00␣8.717E-03
␣1.830E+00␣7.506E-03␣1.535E+00␣9.388E-03␣1.097E-02␣1.490E+00␣7.546E-03
␣1.590E+00␣5.841E-03␣1.365E+00␣1.105E-02␣1.175E-02␣1.328E+00␣7.770E-03
␣1.410E+00␣6.719E-03␣1.232E+00␣1.152E-02␣1.140E-02␣1.200E+00␣9.298E-03
␣1.270E+00␣9.276E-03␣1.030E+00␣1.086E-02␣1.115E-02␣1.004E+00␣1.027E-02
␣1.059E+00␣1.070E-02␣8.822E-01␣1.062E-02␣1.230E-02␣8.575E-01␣1.020E-02
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␣1.946E-01␣1.690E-02␣1.530E-01␣1.530E-01␣1.446E-01␣1.689E-01␣1.689E-01
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␣8.582E-02␣8.582E-02␣7.061E-02␣7.061E-02␣7.243E-02␣6.235E-02␣6.235E-02
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␣4.250E-02␣4.250E-02␣3.175E-02␣3.175E-02␣3.873E-02␣4.691E-02␣4.691E-02
␣2.542E-02␣2.542E-02␣2.226E-02␣2.226E-02␣2.631E-02␣3.936E-02␣3.936E-02
␣1.813E-02␣1.813E-02␣1.730E-02␣1.730E-02␣1.735E-02␣2.938E-02␣2.938E-02
␣1.496E-02␣1.496E-02␣1.248E-02␣1.248E-02␣1.227E-02␣2.146E-02␣2.146E-02
␣1.513E-02␣1.513E-02␣1.082E-02␣1.082E-02␣1.170E-02␣1.667E-02␣1.667E-02
␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣1.1␣␣␣␣␣0.005␣␣␣␣␣␣␣0.01RM␣16dec05MGA␣␣␣T
␣␣␣␣0

09/17/2007

C␣␣␣2␣␣␣␣3␣␣␣␣2␣␣␣-1␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣306.25␣␣␣␣-2
FFF␣0␣␣␣␣0␣390.00000␣␣␣␣g␣0.44␣␣␣a␣0.31␣01␣F␣T␣F␣F
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␣␣␣␣7␣␣␣␣0␣␣␣␣0␣␣␣␣0
␣1.000E+00Boundary␣Layer
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␣0.500␣1.1440␣0.0499␣0.707␣0.675␣0.7891␣0.0361␣0.686␣0.870␣0.5816␣0.0271␣0.647
␣1.020␣0.4762␣0.0231␣0.665
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␣␣␣29␣␣␣␣7
␣␣␣␣␣␣␣0.0␣␣␣␣␣␣␣0.2␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣0.6␣␣␣␣␣␣␣0.8␣␣␣␣␣␣␣1.0␣␣␣␣␣␣␣1.5␣␣␣␣␣␣␣␣␣2
␣␣␣␣␣␣␣␣␣3␣␣␣␣␣␣␣␣4␣␣␣␣␣␣␣␣␣5␣␣␣␣␣␣␣␣10␣␣␣␣␣␣␣␣20␣␣␣␣␣␣␣␣30␣␣␣␣␣␣␣␣40␣␣␣␣␣␣␣␣50
␣␣␣␣␣␣␣␣60␣␣␣␣␣␣␣␣70␣␣␣␣␣␣␣␣80␣␣␣␣␣␣␣␣90␣␣␣␣␣␣␣100␣␣␣␣␣␣␣110␣␣␣␣␣␣␣120␣␣␣␣␣␣␣130
␣␣␣␣␣␣␣140␣␣␣␣␣␣␣150␣␣␣␣␣␣␣160␣␣␣␣␣␣␣170␣␣␣␣␣␣␣180
␣␣␣␣␣0.340␣␣␣␣␣0.380␣␣␣␣␣0.400␣␣␣␣␣0.500␣␣␣␣␣0.675␣␣␣␣␣0.870␣␣␣␣␣1.020
␣5.223E+00␣1.292E-02␣3.298E+00␣1.217E-02␣1.106E-02␣2.887E+00␣7.720E-03
␣3.465E+00␣1.378E-02␣2.285E+00␣1.171E-02␣1.014E-02␣2.088E+00␣7.043E-03
␣2.397E+00␣1.270E-02␣1.857E+00␣1.050E-02␣9.007E-03␣1.719E+00␣8.491E-03
␣1.949E+00␣1.151E-02␣1.607E+00␣9.407E-03␣9.131E-03␣1.498E+00␣9.345E-03
␣1.687E+00␣1.037E-02␣1.438E+00␣9.219E-03␣1.031E-02␣1.345E+00␣8.998E-03
␣1.506E+00␣8.380E-03␣1.309E+00␣1.027E-02␣1.180E-02␣1.230E+00␣8.212E-03
␣1.370E+00␣6.883E-03␣1.207E+00␣1.158E-02␣1.259E-02␣1.135E+00␣8.406E-03
␣1.260E+00␣7.463E-03␣1.121E+00␣1.199E-02␣1.247E-02␣1.054E+00␣9.563E-03
␣1.167E+00␣9.448E-03␣9.787E-01␣1.149E-02␣1.237E-02␣9.197E-01␣1.039E-02

␣1.015E+00␣1.068E-02␣8.637E-01␣1.125E-02␣1.328E-02␣8.102E-01␣1.051E-02
␣8.927E-01␣1.076E-02␣7.669E-01␣1.456E-02␣1.776E-02␣7.182E-01␣1.293E-02
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␣6.291E-01␣1.663E-02␣5.494E-01␣1.302E-02␣1.529E-02␣5.117E-01␣1.359E-02
␣5.613E-01␣1.556E-02␣4.430E-01␣1.175E-02␣1.384E-02␣4.094E-01␣1.226E-02
␣4.414E-01␣1.316E-02␣3.529E-01␣1.180E-02␣1.377E-02␣3.268E-01␣1.268E-02
␣3.412E-01␣1.282E-02␣2.763E-01␣1.290E-02␣1.468E-02␣2.639E-01␣1.486E-02
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␣1.800E-01␣1.800E-01␣1.380E-01␣1.380E-01␣1.297E-01␣1.462E-01␣1.462E-01
␣1.495E-01␣1.495E-01␣1.146E-01␣1.146E-01␣1.097E-01␣1.142E-01␣1.142E-01
␣1.192E-01␣1.192E-01␣9.424E-02␣9.424E-02␣9.366E-02␣8.899E-02␣8.899E-02
␣8.985E-02␣8.985E-02␣7.428E-02␣7.428E-02␣7.758E-02␣7.221E-02␣7.221E-02
␣6.437E-02␣6.437E-02␣5.532E-02␣5.532E-02␣6.154E-02␣6.215E-02␣6.215E-02
␣4.460E-02␣4.460E-02␣3.385E-02␣3.385E-02␣4.157E-02␣5.285E-02␣5.285E-02
␣2.656E-02␣2.656E-02␣2.318E-02␣2.318E-02␣2.799E-02␣4.375E-02␣4.375E-02
␣1.876E-02␣1.876E-02␣1.770E-02␣1.770E-02␣1.860E-02␣3.309E-02␣3.309E-02
␣1.582E-02␣1.582E-02␣1.332E-02␣1.332E-02␣1.345E-02␣2.431E-02␣2.431E-02
␣1.591E-02␣1.591E-02␣1.189E-02␣1.189E-02␣1.260E-02␣1.841E-02␣1.841E-02
␣5.223E+00␣1.292E-02␣3.298E+00␣1.217E-02␣1.106E-02␣2.887E+00␣7.720E-03
␣3.465E+00␣1.378E-02␣2.285E+00␣1.171E-02␣1.014E-02␣2.088E+00␣7.043E-03
␣2.397E+00␣1.270E-02␣1.857E+00␣1.050E-02␣9.007E-03␣1.719E+00␣8.491E-03
␣1.949E+00␣1.151E-02␣1.607E+00␣9.407E-03␣9.131E-03␣1.498E+00␣9.345E-03
␣1.687E+00␣1.037E-02␣1.438E+00␣9.219E-03␣1.031E-02␣1.345E+00␣8.998E-03
␣1.506E+00␣8.380E-03␣1.309E+00␣1.027E-02␣1.180E-02␣1.230E+00␣8.212E-03
␣1.370E+00␣6.883E-03␣1.207E+00␣1.158E-02␣1.259E-02␣1.135E+00␣8.406E-03
␣1.260E+00␣7.463E-03␣1.121E+00␣1.199E-02␣1.247E-02␣1.054E+00␣9.563E-03
␣1.167E+00␣9.448E-03␣9.787E-01␣1.149E-02␣1.237E-02␣9.197E-01␣1.039E-02
␣1.015E+00␣1.068E-02␣8.637E-01␣1.125E-02␣1.328E-02␣8.102E-01␣1.051E-02
␣8.927E-01␣1.076E-02␣7.669E-01␣1.456E-02␣1.776E-02␣7.182E-01␣1.293E-02
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␣7.044E-01␣1.498E-02␣6.120E-01␣1.429E-02␣1.701E-02␣5.716E-01␣1.435E-02
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␣3.412E-01␣1.282E-02␣2.763E-01␣1.290E-02␣1.468E-02␣2.639E-01␣1.486E-02
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␣1.192E-01␣1.192E-01␣9.424E-02␣9.424E-02␣9.366E-02␣8.899E-02␣8.899E-02

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␣2.656E-02␣2.656E-02␣2.318E-02␣2.318E-02␣2.799E-02␣4.375E-02␣4.375E-02
␣1.876E-02␣1.876E-02␣1.770E-02␣1.770E-02␣1.860E-02␣3.309E-02␣3.309E-02
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␣5.223E+00␣1.292E-02␣3.298E+00␣1.217E-02␣1.106E-02␣2.887E+00␣7.720E-03
␣3.465E+00␣1.378E-02␣2.285E+00␣1.171E-02␣1.014E-02␣2.088E+00␣7.043E-03
␣2.397E+00␣1.270E-02␣1.857E+00␣1.050E-02␣9.007E-03␣1.719E+00␣8.491E-03
␣1.949E+00␣1.151E-02␣1.607E+00␣9.407E-03␣9.131E-03␣1.498E+00␣9.345E-03
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␣1.506E+00␣8.380E-03␣1.309E+00␣1.027E-02␣1.180E-02␣1.230E+00␣8.212E-03
␣1.370E+00␣6.883E-03␣1.207E+00␣1.158E-02␣1.259E-02␣1.135E+00␣8.406E-03
␣1.260E+00␣7.463E-03␣1.121E+00␣1.199E-02␣1.247E-02␣1.054E+00␣9.563E-03
␣1.167E+00␣9.448E-03␣9.787E-01␣1.149E-02␣1.237E-02␣9.197E-01␣1.039E-02
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␣5.223E+00␣1.292E-02␣3.298E+00␣1.217E-02␣1.106E-02␣2.887E+00␣7.720E-03
␣3.465E+00␣1.378E-02␣2.285E+00␣1.171E-02␣1.014E-02␣2.088E+00␣7.043E-03
␣2.397E+00␣1.270E-02␣1.857E+00␣1.050E-02␣9.007E-03␣1.719E+00␣8.491E-03
␣1.949E+00␣1.151E-02␣1.607E+00␣9.407E-03␣9.131E-03␣1.498E+00␣9.345E-03
␣1.687E+00␣1.037E-02␣1.438E+00␣9.219E-03␣1.031E-02␣1.345E+00␣8.998E-03
␣1.506E+00␣8.380E-03␣1.309E+00␣1.027E-02␣1.180E-02␣1.230E+00␣8.212E-03

␣1.370E+00␣6.883E-03␣1.207E+00␣1.158E-02␣1.259E-02␣1.135E+00␣8.406E-03
␣1.260E+00␣7.463E-03␣1.121E+00␣1.199E-02␣1.247E-02␣1.054E+00␣9.563E-03
␣1.167E+00␣9.448E-03␣9.787E-01␣1.149E-02␣1.237E-02␣9.197E-01␣1.039E-02
␣1.015E+00␣1.068E-02␣8.637E-01␣1.125E-02␣1.328E-02␣8.102E-01␣1.051E-02
␣8.927E-01␣1.076E-02␣7.669E-01␣1.456E-02␣1.776E-02␣7.182E-01␣1.293E-02
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␣1.800E-01␣1.800E-01␣1.380E-01␣1.380E-01␣1.297E-01␣1.462E-01␣1.462E-01
␣1.495E-01␣1.495E-01␣1.146E-01␣1.146E-01␣1.097E-01␣1.142E-01␣1.142E-01
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␣8.985E-02␣8.985E-02␣7.428E-02␣7.428E-02␣7.758E-02␣7.221E-02␣7.221E-02
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␣4.460E-02␣4.460E-02␣3.385E-02␣3.385E-02␣4.157E-02␣5.285E-02␣5.285E-02
␣2.656E-02␣2.656E-02␣2.318E-02␣2.318E-02␣2.799E-02␣4.375E-02␣4.375E-02
␣1.876E-02␣1.876E-02␣1.770E-02␣1.770E-02␣1.860E-02␣3.309E-02␣3.309E-02
␣1.582E-02␣1.582E-02␣1.332E-02␣1.332E-02␣1.345E-02␣2.431E-02␣2.431E-02
␣1.591E-02␣1.591E-02␣1.189E-02␣1.189E-02␣1.260E-02␣1.841E-02␣1.841E-02
␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣1.1␣␣␣␣␣0.005␣␣␣␣␣␣0.01RM␣17sep07MGA␣␣␣T
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DATA/Filter/ASTER_vnir.flt
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␣␣␣␣7␣␣␣␣0␣␣␣␣0␣␣␣␣0
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␣0.340␣1.3159␣0.0992␣0.750␣0.360␣1.2256␣0.0912␣0.747␣0.400␣1.1991␣0.0872␣0.744
␣0.500␣1.0894␣0.0753␣0.738␣0.675␣0.8833␣0.0590␣0.728␣0.870␣0.7393␣0.0473␣0.707
␣1.020␣0.6641␣0.0416␣0.720
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␣␣␣␣␣␣␣␣␣3␣␣␣␣␣␣␣␣4␣␣␣␣␣␣␣␣␣5␣␣␣␣␣␣␣␣10␣␣␣␣␣␣␣␣20␣␣␣␣␣␣␣␣30␣␣␣␣␣␣␣␣40␣␣␣␣␣␣␣␣50

␣␣␣␣␣␣␣␣60␣␣␣␣␣␣␣␣70␣␣␣␣␣␣␣␣80␣␣␣␣␣␣␣␣90␣␣␣␣␣␣␣␣100␣␣␣␣␣␣␣␣110␣␣␣␣␣␣␣␣120␣␣␣␣␣␣␣␣130
␣␣␣␣␣␣␣␣140␣␣␣␣␣␣␣␣150␣␣␣␣␣␣␣␣160␣␣␣␣␣␣␣␣170␣␣␣␣␣␣␣␣180
␣␣␣␣␣␣0.340␣␣␣␣␣␣0.380␣␣␣␣␣␣0.400␣␣␣␣␣␣0.500␣␣␣␣␣␣0.675␣␣␣␣␣␣0.870␣␣␣␣␣␣1.020
␣2.631E+01␣1.067E-02␣1.155E+01␣9.952E-03␣9.059E-03␣9.886E+00␣6.758E-03
␣1.184E+01␣1.192E-02␣5.216E+00␣9.805E-03␣8.269E-03␣4.867E+00␣6.016E-03
␣5.328E+00␣1.062E-02␣3.343E+00␣8.691E-03␣6.957E-03␣3.203E+00␣8.037E-03
␣3.421E+00␣9.889E-03␣2.481E+00␣7.421E-03␣7.108E-03␣2.405E+00␣9.184E-03
␣2.544E+00␣9.123E-03␣1.992E+00␣7.288E-03␣8.572E-03␣1.948E+00␣8.442E-03
␣2.045E+00␣6.979E-03␣1.675E+00␣8.788E-03␣1.036E-02␣1.650E+00␣7.075E-03
␣1.720E+00␣5.248E-03␣1.452E+00␣1.060E-02␣1.111E-02␣1.435E+00␣7.330E-03
␣1.490E+00␣6.267E-03␣1.284E+00␣1.107E-02␣1.062E-02␣1.273E+00␣9.066E-03
␣1.317E+00␣9.072E-03␣1.044E+00␣1.033E-02␣1.030E-02␣1.036E+00␣1.011E-02
␣1.068E+00␣1.055E-02␣8.763E-01␣1.012E-02␣1.158E-02␣8.676E-01␣9.924E-03
␣8.942E-01␣1.030E-02␣7.499E-01␣1.755E-02␣2.048E-02␣7.407E-01␣1.554E-02
␣7.652E-01␣1.656E-02␣6.513E-01␣1.627E-02␣1.897E-02␣6.411E-01␣1.532E-02
␣6.656E-01␣1.749E-02␣5.721E-01␣1.607E-02␣1.795E-02␣5.606E-01␣1.665E-02
␣5.862E-01␣1.987E-02␣5.086E-01␣1.399E-02␣1.527E-02␣4.939E-01␣1.507E-02
␣5.163E-01␣1.802E-02␣4.057E-01␣1.176E-02␣1.289E-02␣3.831E-01␣1.234E-02
␣3.963E-01␣1.396E-02␣3.191E-01␣1.139E-02␣1.245E-02␣2.962E-01␣1.243E-02
␣2.974E-01␣1.292E-02␣2.453E-01␣1.263E-02␣1.346E-02␣2.338E-01␣1.556E-02
␣2.219E-01␣1.577E-02␣1.832E-01␣1.268E-02␣1.333E-02␣1.910E-01␣1.688E-02
␣1.812E-01␣1.712E-02␣1.427E-01␣1.427E-01␣1.346E-01␣1.610E-01␣1.610E-01
␣1.562E-01␣1.562E-01␣1.173E-01␣1.173E-01␣1.080E-01␣1.300E-01␣1.300E-01
␣1.336E-01␣1.336E-01␣9.976E-02␣9.976E-02␣9.349E-02␣9.792E-02␣9.792E-02
␣1.086E-01␣1.086E-01␣8.445E-02␣8.445E-02␣8.194E-02␣7.251E-02␣7.251E-02
␣8.247E-02␣8.247E-02␣6.781E-02␣6.781E-02␣6.878E-02␣5.697E-02␣5.697E-02
␣5.920E-02␣5.920E-02␣5.043E-02␣5.043E-02␣5.450E-02␣4.916E-02␣4.916E-02
␣4.101E-02␣4.101E-02␣3.033E-02␣3.033E-02␣3.671E-02␣4.341E-02␣4.341E-02
␣2.475E-02␣2.475E-02␣2.162E-02␣2.162E-02␣2.511E-02␣3.657E-02␣3.657E-02
␣1.778E-02␣1.778E-02␣1.696E-02␣1.696E-02␣1.656E-02␣2.698E-02␣2.698E-02
␣1.439E-02␣1.439E-02␣1.194E-02␣1.194E-02␣1.159E-02␣1.965E-02␣1.965E-02
␣1.452E-02␣1.452E-02␣1.016E-02␣1.016E-02␣1.113E-02␣1.556E-02␣1.556E-02
␣2.631E+01␣1.067E-02␣1.155E+01␣9.952E-03␣9.059E-03␣9.886E+00␣6.758E-03
␣1.184E+01␣1.192E-02␣5.216E+00␣9.805E-03␣8.269E-03␣4.867E+00␣6.016E-03
␣5.328E+00␣1.062E-02␣3.343E+00␣8.691E-03␣6.957E-03␣3.203E+00␣8.037E-03
␣3.421E+00␣9.889E-03␣2.481E+00␣7.421E-03␣7.108E-03␣2.405E+00␣9.184E-03
␣2.544E+00␣9.123E-03␣1.992E+00␣7.288E-03␣8.572E-03␣1.948E+00␣8.442E-03
␣2.045E+00␣6.979E-03␣1.675E+00␣8.788E-03␣1.036E-02␣1.650E+00␣7.075E-03
␣1.720E+00␣5.248E-03␣1.452E+00␣1.060E-02␣1.111E-02␣1.435E+00␣7.330E-03
␣1.490E+00␣6.267E-03␣1.284E+00␣1.107E-02␣1.062E-02␣1.273E+00␣9.066E-03
␣1.317E+00␣9.072E-03␣1.044E+00␣1.033E-02␣1.030E-02␣1.036E+00␣1.011E-02
␣1.068E+00␣1.055E-02␣8.763E-01␣1.012E-02␣1.158E-02␣8.676E-01␣9.924E-03

␣8.942E-01␣1.030E-02␣7.499E-01␣1.755E-02␣2.048E-02␣7.407E-01␣1.554E-02
␣7.652E-01␣1.656E-02␣6.513E-01␣1.627E-02␣1.897E-02␣6.411E-01␣1.532E-02
␣6.656E-01␣1.749E-02␣5.721E-01␣1.607E-02␣1.795E-02␣5.606E-01␣1.665E-02
␣5.862E-01␣1.987E-02␣5.086E-01␣1.399E-02␣1.527E-02␣4.939E-01␣1.507E-02
␣5.163E-01␣1.802E-02␣4.057E-01␣1.176E-02␣1.289E-02␣3.831E-01␣1.234E-02
␣3.963E-01␣1.396E-02␣3.191E-01␣1.139E-02␣1.245E-02␣2.962E-01␣1.243E-02
␣2.974E-01␣1.292E-02␣2.453E-01␣1.263E-02␣1.346E-02␣2.338E-01␣1.556E-02
␣2.219E-01␣1.577E-02␣1.832E-01␣1.268E-02␣1.333E-02␣1.910E-01␣1.688E-02
␣1.812E-01␣1.712E-02␣1.427E-01␣1.427E-01␣1.346E-01␣1.610E-01␣1.610E-01
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␣1.086E-01␣1.086E-01␣8.445E-02␣8.445E-02␣8.194E-02␣7.251E-02␣7.251E-02
␣8.247E-02␣8.247E-02␣6.781E-02␣6.781E-02␣6.878E-02␣5.697E-02␣5.697E-02
␣5.920E-02␣5.920E-02␣5.043E-02␣5.043E-02␣5.450E-02␣4.916E-02␣4.916E-02
␣4.101E-02␣4.101E-02␣3.033E-02␣3.033E-02␣3.671E-02␣4.341E-02␣4.341E-02
␣2.475E-02␣2.475E-02␣2.162E-02␣2.162E-02␣2.511E-02␣3.657E-02␣3.657E-02
␣1.778E-02␣1.778E-02␣1.696E-02␣1.696E-02␣1.656E-02␣2.698E-02␣2.698E-02
␣1.439E-02␣1.439E-02␣1.194E-02␣1.194E-02␣1.159E-02␣1.965E-02␣1.965E-02
␣1.452E-02␣1.452E-02␣1.016E-02␣1.016E-02␣1.113E-02␣1.556E-02␣1.556E-02
␣2.631E+01␣1.067E-02␣1.155E+01␣9.952E-03␣9.059E-03␣9.886E+00␣6.758E-03
␣1.184E+01␣1.192E-02␣5.216E+00␣9.805E-03␣8.269E-03␣4.867E+00␣6.016E-03
␣5.328E+00␣1.062E-02␣3.343E+00␣8.691E-03␣6.957E-03␣3.203E+00␣8.037E-03
␣3.421E+00␣9.889E-03␣2.481E+00␣7.421E-03␣7.108E-03␣2.405E+00␣9.184E-03
␣2.544E+00␣9.123E-03␣1.992E+00␣7.288E-03␣8.572E-03␣1.948E+00␣8.442E-03
␣2.045E+00␣6.979E-03␣1.675E+00␣8.788E-03␣1.036E-02␣1.650E+00␣7.075E-03
␣1.720E+00␣5.248E-03␣1.452E+00␣1.060E-02␣1.111E-02␣1.435E+00␣7.330E-03
␣1.490E+00␣6.267E-03␣1.284E+00␣1.107E-02␣1.062E-02␣1.273E+00␣9.066E-03
␣1.317E+00␣9.072E-03␣1.044E+00␣1.033E-02␣1.030E-02␣1.036E+00␣1.011E-02
␣1.068E+00␣1.055E-02␣8.763E-01␣1.012E-02␣1.158E-02␣8.676E-01␣9.924E-03
␣8.942E-01␣1.030E-02␣7.499E-01␣1.755E-02␣2.048E-02␣7.407E-01␣1.554E-02
␣7.652E-01␣1.656E-02␣6.513E-01␣1.627E-02␣1.897E-02␣6.411E-01␣1.532E-02
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␣5.862E-01␣1.987E-02␣5.086E-01␣1.399E-02␣1.527E-02␣4.939E-01␣1.507E-02
␣5.163E-01␣1.802E-02␣4.057E-01␣1.176E-02␣1.289E-02␣3.831E-01␣1.234E-02
␣3.963E-01␣1.396E-02␣3.191E-01␣1.139E-02␣1.245E-02␣2.962E-01␣1.243E-02
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␣2.219E-01␣1.577E-02␣1.832E-01␣1.268E-02␣1.333E-02␣1.910E-01␣1.688E-02
␣1.812E-01␣1.712E-02␣1.427E-01␣1.427E-01␣1.346E-01␣1.610E-01␣1.610E-01
␣1.562E-01␣1.562E-01␣1.173E-01␣1.173E-01␣1.080E-01␣1.300E-01␣1.300E-01
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␣8.247E-02␣8.247E-02␣6.781E-02␣6.781E-02␣6.878E-02␣5.697E-02␣5.697E-02

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␣4.101E-02␣4.101E-02␣3.033E-02␣3.033E-02␣3.671E-02␣4.341E-02␣4.341E-02
␣2.475E-02␣2.475E-02␣2.162E-02␣2.162E-02␣2.511E-02␣3.657E-02␣3.657E-02
␣1.778E-02␣1.778E-02␣1.696E-02␣1.696E-02␣1.656E-02␣2.698E-02␣2.698E-02
␣1.439E-02␣1.439E-02␣1.194E-02␣1.194E-02␣1.159E-02␣1.965E-02␣1.965E-02
␣1.452E-02␣1.452E-02␣1.016E-02␣1.016E-02␣1.113E-02␣1.556E-02␣1.556E-02
␣2.631E+01␣1.067E-02␣1.155E+01␣9.952E-03␣9.059E-03␣9.886E+00␣6.758E-03
␣1.184E+01␣1.192E-02␣5.216E+00␣9.805E-03␣8.269E-03␣4.867E+00␣6.016E-03
␣5.328E+00␣1.062E-02␣3.343E+00␣8.691E-03␣6.957E-03␣3.203E+00␣8.037E-03
␣3.421E+00␣9.889E-03␣2.481E+00␣7.421E-03␣7.108E-03␣2.405E+00␣9.184E-03
␣2.544E+00␣9.123E-03␣1.992E+00␣7.288E-03␣8.572E-03␣1.948E+00␣8.442E-03
␣2.045E+00␣6.979E-03␣1.675E+00␣8.788E-03␣1.036E-02␣1.650E+00␣7.075E-03
␣1.720E+00␣5.248E-03␣1.452E+00␣1.060E-02␣1.111E-02␣1.435E+00␣7.330E-03
␣1.490E+00␣6.267E-03␣1.284E+00␣1.107E-02␣1.062E-02␣1.273E+00␣9.066E-03
␣1.317E+00␣9.072E-03␣1.044E+00␣1.033E-02␣1.030E-02␣1.036E+00␣1.011E-02
␣1.068E+00␣1.055E-02␣8.763E-01␣1.012E-02␣1.158E-02␣8.676E-01␣9.924E-03
␣8.942E-01␣1.030E-02␣7.499E-01␣1.755E-02␣2.048E-02␣7.407E-01␣1.554E-02
␣7.652E-01␣1.656E-02␣6.513E-01␣1.627E-02␣1.897E-02␣6.411E-01␣1.532E-02
␣6.656E-01␣1.749E-02␣5.721E-01␣1.607E-02␣1.795E-02␣5.606E-01␣1.665E-02
␣5.862E-01␣1.987E-02␣5.086E-01␣1.399E-02␣1.527E-02␣4.939E-01␣1.507E-02
␣5.163E-01␣1.802E-02␣4.057E-01␣1.176E-02␣1.289E-02␣3.831E-01␣1.234E-02
␣3.963E-01␣1.396E-02␣3.191E-01␣1.139E-02␣1.245E-02␣2.962E-01␣1.243E-02
␣2.974E-01␣1.292E-02␣2.453E-01␣1.263E-02␣1.346E-02␣2.338E-01␣1.556E-02
␣2.219E-01␣1.577E-02␣1.832E-01␣1.268E-02␣1.333E-02␣1.910E-01␣1.688E-02
␣1.812E-01␣1.712E-02␣1.427E-01␣1.427E-01␣1.346E-01␣1.610E-01␣1.610E-01
␣1.562E-01␣1.562E-01␣1.173E-01␣1.173E-01␣1.080E-01␣1.300E-01␣1.300E-01
␣1.336E-01␣1.336E-01␣9.976E-02␣9.976E-02␣9.349E-02␣9.792E-02␣9.792E-02
␣1.086E-01␣1.086E-01␣8.445E-02␣8.445E-02␣8.194E-02␣7.251E-02␣7.251E-02
␣8.247E-02␣8.247E-02␣6.781E-02␣6.781E-02␣6.878E-02␣5.697E-02␣5.697E-02
␣5.920E-02␣5.920E-02␣5.043E-02␣5.043E-02␣5.450E-02␣4.916E-02␣4.916E-02
␣4.101E-02␣4.101E-02␣3.033E-02␣3.033E-02␣3.671E-02␣4.341E-02␣4.341E-02
␣2.475E-02␣2.475E-02␣2.162E-02␣2.162E-02␣2.511E-02␣3.657E-02␣3.657E-02
␣1.778E-02␣1.778E-02␣1.696E-02␣1.696E-02␣1.656E-02␣2.698E-02␣2.698E-02
␣1.439E-02␣1.439E-02␣1.194E-02␣1.194E-02␣1.159E-02␣1.965E-02␣1.965E-02
␣1.452E-02␣1.452E-02␣1.016E-02␣1.016E-02␣1.113E-02␣1.556E-02␣1.556E-02
␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣1.1␣␣␣␣␣0.005␣␣␣␣␣␣␣0.01RM␣19sep08MGA␣␣␣T
␣␣␣␣0

09/06/2009

C␣␣␣2␣␣␣␣3␣␣␣␣2␣␣␣-1␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣306.25␣␣␣␣␣-4
FFF␣0␣␣␣␣0␣390.00000␣␣␣␣g␣0.65␣␣␣a␣0.27␣01␣F␣T␣F␣F
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␣␣␣␣7␣␣␣␣0␣␣␣␣0␣␣␣␣0
␣1.000E+00Boundary␣Layer
␣0.340␣1.6186␣0.0709␣0.730␣0.360␣1.4488␣0.0639␣0.723␣0.400␣1.3761␣0.0598␣0.714
␣0.500␣1.1456␣0.0495␣0.707␣0.675␣0.7864␣0.0357␣0.685␣0.870␣0.5774␣0.0268␣0.646
␣1.020␣0.4715␣0.0228␣0.663
␣␣␣705.000␣␣␣␣␣␣.000␣␣␣180.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣0
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␣␣␣29␣␣␣␣7
␣␣␣␣␣␣␣0.0␣␣␣␣␣␣␣0.2␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣0.6␣␣␣␣␣␣␣0.8␣␣␣␣␣␣␣1.0␣␣␣␣␣␣␣1.5␣␣␣␣␣␣␣␣2
␣␣␣␣␣␣␣␣3␣␣␣␣␣␣␣␣4␣␣␣␣␣␣␣␣5␣␣␣␣␣␣␣10␣␣␣␣␣␣␣20␣␣␣␣␣␣␣30␣␣␣␣␣␣␣40␣␣␣␣␣␣␣50
␣␣␣␣␣␣␣60␣␣␣␣␣␣␣70␣␣␣␣␣␣␣80␣␣␣␣␣␣␣90␣␣␣␣␣␣100␣␣␣␣␣␣110␣␣␣␣␣␣120␣␣␣␣␣␣130
␣␣␣␣␣␣140␣␣␣␣␣␣150␣␣␣␣␣␣160␣␣␣␣␣␣170␣␣␣␣␣␣180
␣␣␣␣␣0.340␣␣␣␣␣0.380␣␣␣␣␣0.400␣␣␣␣␣0.500␣␣␣␣␣0.675␣␣␣␣␣0.870␣␣␣␣␣1.020
␣5.002E+00␣1.298E-02␣3.193E+00␣1.222E-02␣1.111E-02␣2.796E+00␣7.751E-03
␣3.358E+00␣1.383E-02␣2.237E+00␣1.176E-02␣1.019E-02␣2.042E+00␣7.073E-03
␣2.349E+00␣1.275E-02␣1.829E+00␣1.055E-02␣9.066E-03␣1.690E+00␣8.500E-03
␣1.920E+00␣1.155E-02␣1.589E+00␣9.468E-03␣9.190E-03␣1.478E+00␣9.345E-03
␣1.668E+00␣1.040E-02␣1.425E+00␣9.276E-03␣1.035E-02␣1.332E+00␣9.007E-03
␣1.494E+00␣8.421E-03␣1.300E+00␣1.030E-02␣1.184E-02␣1.219E+00␣8.240E-03
␣1.361E+00␣6.932E-03␣1.200E+00␣1.161E-02␣1.262E-02␣1.126E+00␣8.433E-03
␣1.253E+00␣7.497E-03␣1.115E+00␣1.201E-02␣1.251E-02␣1.047E+00␣9.574E-03
␣1.162E+00␣9.456E-03␣9.757E-01␣1.151E-02␣1.241E-02␣9.153E-01␣1.039E-02
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␣7.045E-01␣1.491E-02␣6.123E-01␣1.425E-02␣1.699E-02␣5.710E-01␣1.430E-02
␣6.294E-01␣1.654E-02␣5.499E-01␣1.299E-02␣1.530E-02␣5.115E-01␣1.357E-02
␣5.619E-01␣1.549E-02␣4.435E-01␣1.176E-02␣1.388E-02␣4.097E-01␣1.227E-02
␣4.423E-01␣1.314E-02␣3.537E-01␣1.182E-02␣1.382E-02␣3.274E-01␣1.270E-02
␣3.422E-01␣1.281E-02␣2.771E-01␣1.290E-02␣1.471E-02␣2.645E-01␣1.484E-02
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␣1.586E-02␣1.586E-02␣1.336E-02␣1.336E-02␣1.350E-02␣2.443E-02␣2.443E-02
␣1.594E-02␣1.594E-02␣1.194E-02␣1.194E-02␣1.264E-02␣1.848E-02␣1.848E-02
␣5.002E+00␣1.298E-02␣3.193E+00␣1.222E-02␣1.111E-02␣2.796E+00␣7.751E-03
␣3.358E+00␣1.383E-02␣2.237E+00␣1.176E-02␣1.019E-02␣2.042E+00␣7.073E-03
␣2.349E+00␣1.275E-02␣1.829E+00␣1.055E-02␣9.066E-03␣1.690E+00␣8.500E-03
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␣1.668E+00␣1.040E-02␣1.425E+00␣9.276E-03␣1.035E-02␣1.332E+00␣9.007E-03
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␣1.361E+00␣6.932E-03␣1.200E+00␣1.161E-02␣1.262E-02␣1.126E+00␣8.433E-03
␣1.253E+00␣7.497E-03␣1.115E+00␣1.201E-02␣1.251E-02␣1.047E+00␣9.574E-03
␣1.162E+00␣9.456E-03␣9.757E-01␣1.151E-02␣1.241E-02␣9.153E-01␣1.039E-02
␣1.012E+00␣1.068E-02␣8.622E-01␣1.127E-02␣1.332E-02␣8.075E-01␣1.052E-02
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␣1.805E-01␣1.805E-01␣1.385E-01␣1.385E-01␣1.303E-01␣1.467E-01␣1.467E-01
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␣8.999E-02␣8.999E-02␣7.442E-02␣7.442E-02␣7.779E-02␣7.268E-02␣7.268E-02
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␣2.661E-02␣2.661E-02␣2.322E-02␣2.322E-02␣2.806E-02␣4.394E-02␣4.394E-02
␣1.879E-02␣1.879E-02␣1.771E-02␣1.771E-02␣1.865E-02␣3.325E-02␣3.325E-02
␣1.586E-02␣1.586E-02␣1.336E-02␣1.336E-02␣1.350E-02␣2.443E-02␣2.443E-02
␣1.594E-02␣1.594E-02␣1.194E-02␣1.194E-02␣1.264E-02␣1.848E-02␣1.848E-02
␣5.002E+00␣1.298E-02␣3.193E+00␣1.222E-02␣1.111E-02␣2.796E+00␣7.751E-03
␣3.358E+00␣1.383E-02␣2.237E+00␣1.176E-02␣1.019E-02␣2.042E+00␣7.073E-03
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␣1.494E+00␣8.421E-03␣1.300E+00␣1.030E-02␣1.184E-02␣1.219E+00␣8.240E-03
␣1.361E+00␣6.932E-03␣1.200E+00␣1.161E-02␣1.262E-02␣1.126E+00␣8.433E-03
␣1.253E+00␣7.497E-03␣1.115E+00␣1.201E-02␣1.251E-02␣1.047E+00␣9.574E-03
␣1.162E+00␣9.456E-03␣9.757E-01␣1.151E-02␣1.241E-02␣9.153E-01␣1.039E-02
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␣8.999E-02␣8.999E-02␣7.442E-02␣7.442E-02␣7.779E-02␣7.268E-02␣7.268E-02
␣6.449E-02␣6.449E-02␣5.543E-02␣5.543E-02␣6.169E-02␣6.254E-02␣6.254E-02
␣4.469E-02␣4.469E-02␣3.393E-02␣3.393E-02␣4.168E-02␣5.313E-02␣5.313E-02
␣2.661E-02␣2.661E-02␣2.322E-02␣2.322E-02␣2.806E-02␣4.394E-02␣4.394E-02
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␣1.594E-02␣1.594E-02␣1.194E-02␣1.194E-02␣1.264E-02␣1.848E-02␣1.848E-02
␣5.002E+00␣1.298E-02␣3.193E+00␣1.222E-02␣1.111E-02␣2.796E+00␣7.751E-03
␣3.358E+00␣1.383E-02␣2.237E+00␣1.176E-02␣1.019E-02␣2.042E+00␣7.073E-03
␣2.349E+00␣1.275E-02␣1.829E+00␣1.055E-02␣9.066E-03␣1.690E+00␣8.500E-03
␣1.920E+00␣1.155E-02␣1.589E+00␣9.468E-03␣9.190E-03␣1.478E+00␣9.345E-03
␣1.668E+00␣1.040E-02␣1.425E+00␣9.276E-03␣1.035E-02␣1.332E+00␣9.007E-03
␣1.494E+00␣8.421E-03␣1.300E+00␣1.030E-02␣1.184E-02␣1.219E+00␣8.240E-03
␣1.361E+00␣6.932E-03␣1.200E+00␣1.161E-02␣1.262E-02␣1.126E+00␣8.433E-03
␣1.253E+00␣7.497E-03␣1.115E+00␣1.201E-02␣1.251E-02␣1.047E+00␣9.574E-03
␣1.162E+00␣9.456E-03␣9.757E-01␣1.151E-02␣1.241E-02␣9.153E-01␣1.039E-02
␣1.012E+00␣1.068E-02␣8.622E-01␣1.127E-02␣1.332E-02␣8.075E-01␣1.052E-02
␣8.915E-01␣1.076E-02␣7.662E-01␣1.450E-02␣1.770E-02␣7.165E-01␣1.288E-02
␣7.906E-01␣1.362E-02␣6.839E-01␣1.432E-02␣1.754E-02␣6.386E-01␣1.340E-02
␣7.045E-01␣1.491E-02␣6.123E-01␣1.425E-02␣1.699E-02␣5.710E-01␣1.430E-02
␣6.294E-01␣1.654E-02␣5.499E-01␣1.299E-02␣1.530E-02␣5.115E-01␣1.357E-02
␣5.619E-01␣1.549E-02␣4.435E-01␣1.176E-02␣1.388E-02␣4.097E-01␣1.227E-02
␣4.423E-01␣1.314E-02␣3.537E-01␣1.182E-02␣1.382E-02␣3.274E-01␣1.270E-02
␣3.422E-01␣1.281E-02␣2.771E-01␣1.290E-02␣1.471E-02␣2.645E-01␣1.484E-02
␣2.656E-01␣1.494E-02␣2.146E-01␣1.324E-02␣1.493E-02␣2.177E-01␣1.588E-02
␣2.157E-01␣1.609E-02␣1.698E-01␣1.698E-01␣1.616E-01␣1.809E-01␣1.809E-01
␣1.805E-01␣1.805E-01␣1.385E-01␣1.385E-01␣1.303E-01␣1.467E-01␣1.467E-01
␣1.498E-01␣1.498E-01␣1.149E-01␣1.149E-01␣1.101E-01␣1.148E-01␣1.148E-01
␣1.193E-01␣1.193E-01␣9.446E-02␣9.446E-02␣9.396E-02␣8.948E-02␣8.948E-02
␣8.999E-02␣8.999E-02␣7.442E-02␣7.442E-02␣7.779E-02␣7.268E-02␣7.268E-02
␣6.449E-02␣6.449E-02␣5.543E-02␣5.543E-02␣6.169E-02␣6.254E-02␣6.254E-02

␣4.469E-02␣4.469E-02␣3.393E-02␣3.393E-02␣4.168E-02␣5.313E-02␣5.313E-02
␣2.661E-02␣2.661E-02␣2.322E-02␣2.322E-02␣2.806E-02␣4.394E-02␣4.394E-02
␣1.879E-02␣1.879E-02␣1.771E-02␣1.771E-02␣1.865E-02␣3.325E-02␣3.325E-02
␣1.586E-02␣1.586E-02␣1.336E-02␣1.336E-02␣1.350E-02␣2.443E-02␣2.443E-02
␣1.594E-02␣1.594E-02␣1.194E-02␣1.194E-02␣1.264E-02␣1.848E-02␣1.848E-02
␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣1.1␣␣␣␣␣0.005␣␣␣␣␣␣0.01RM␣06sep09MGA␣␣␣T
␣␣␣␣0

09/25/2010

C␣␣␣2␣␣␣␣3␣␣␣␣2␣␣␣-1␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣306.25␣␣␣␣-5
FFF␣0␣␣␣␣0␣390.00000␣␣␣␣g␣0.16␣␣␣a␣0.24␣01␣F␣T␣F␣F
DATA/Filter/ASTER_vnir.flt
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␣␣␣␣7␣␣␣␣0␣␣␣␣0␣␣␣␣0
␣1.000E+00Boundary␣Layer
␣0.340␣1.9874␣0.0663␣0.711␣0.360␣1.7087␣0.0592␣0.700␣0.400␣1.5798␣0.0544␣0.686
␣0.500␣1.2022␣0.0435␣0.674␣0.675␣0.6939␣0.0293␣0.630␣0.870␣0.4433␣0.0209␣0.561
␣1.020␣0.3263␣0.0174␣0.573
␣␣␣705.000␣␣␣␣␣␣.000␣␣␣180.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣0
␣␣␣12␣␣␣␣1␣␣268␣␣␣␣0
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␣␣␣29␣␣␣␣7
␣␣␣␣␣␣␣0.0␣␣␣␣␣␣␣0.2␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣0.6␣␣␣␣␣␣␣0.8␣␣␣␣␣␣␣1.0␣␣␣␣␣␣␣1.5␣␣␣␣␣␣␣␣␣2
␣␣␣␣␣␣␣␣␣3␣␣␣␣␣␣␣␣4␣␣␣␣␣␣␣␣␣5␣␣␣␣␣␣␣␣10␣␣␣␣␣␣␣␣20␣␣␣␣␣␣␣␣30␣␣␣␣␣␣␣␣40␣␣␣␣␣␣␣␣50
␣␣␣␣␣␣␣␣60␣␣␣␣␣␣␣␣70␣␣␣␣␣␣␣␣80␣␣␣␣␣␣␣␣90␣␣␣␣␣␣␣␣100␣␣␣␣␣␣␣␣110␣␣␣␣␣␣␣␣120␣␣␣␣␣␣␣␣130
␣␣␣␣␣␣␣␣140␣␣␣␣␣␣␣␣150␣␣␣␣␣␣␣␣160␣␣␣␣␣␣␣␣170␣␣␣␣␣␣␣␣180
␣␣␣␣␣␣0.340␣␣␣␣␣␣0.380␣␣␣␣␣␣0.400␣␣␣␣␣␣0.500␣␣␣␣␣␣0.675␣␣␣␣␣␣0.870␣␣␣␣␣␣1.020
␣1.521E+00␣1.525E-02␣1.311E+00␣1.433E-02␣1.309E-02␣1.117E+00␣9.137E-03
␣1.408E+00␣1.551E-02␣1.213E+00␣1.370E-02␣1.228E-02␣1.043E+00␣8.327E-03
␣1.300E+00␣1.455E-02␣1.147E+00␣1.253E-02␣1.147E-02␣9.903E-01␣8.993E-03
␣1.227E+00␣1.306E-02␣1.094E+00␣1.169E-02␣1.154E-02␣9.465E-01␣9.504E-03
␣1.167E+00␣1.176E-02␣1.046E+00␣1.140E-02␣1.228E-02␣9.077E-01␣9.518E-03
␣1.115E+00␣1.012E-02␣1.004E+00␣1.184E-02␣1.327E-02␣8.718E-01␣9.344E-03
␣1.067E+00␣8.924E-03␣9.639E-01␣1.250E-02␣1.395E-02␣8.376E-01␣9.595E-03
␣1.022E+00␣8.981E-03␣9.255E-01␣1.273E-02␣1.415E-02␣8.047E-01␣1.031E-02
␣9.794E-01␣9.955E-03␣8.524E-01␣1.247E-02␣1.428E-02␣7.419E-01␣1.095E-02
␣8.980E-01␣1.072E-02␣7.834E-01␣1.229E-02␣1.486E-02␣6.829E-01␣1.133E-02
␣8.221E-01␣1.097E-02␣7.185E-01␣1.331E-02␣1.663E-02␣6.276E-01␣1.232E-02
␣7.513E-01␣1.211E-02␣6.575E-01␣1.341E-02␣1.691E-02␣5.760E-01␣1.294E-02
␣6.855E-01␣1.303E-02␣6.007E-01␣1.343E-02␣1.679E-02␣5.282E-01␣1.358E-02
␣6.239E-01␣1.396E-02␣5.477E-01␣1.296E-02␣1.613E-02␣4.836E-01␣1.358E-02
␣5.659E-01␣1.367E-02␣4.525E-01␣1.259E-02␣1.563E-02␣4.036E-01␣1.340E-02

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␣2.405E-01␣1.504E-02␣1.919E-01␣1.919E-01␣1.851E-01␣1.958E-01␣1.958E-01
␣1.970E-01␣1.970E-01␣1.557E-01␣1.557E-01␣1.505E-01␣1.618E-01␣1.618E-01
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␣6.800E-02␣6.800E-02␣5.906E-02␣5.906E-02␣6.677E-02␣7.708E-02␣7.708E-02
␣4.804E-02␣4.804E-02␣3.716E-02␣3.716E-02␣4.538E-02␣6.294E-02␣6.294E-02
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␣2.069E-02␣2.069E-02␣1.876E-02␣1.876E-02␣2.094E-02␣3.864E-02␣3.864E-02
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␣1.727E-02␣1.727E-02␣1.396E-02␣1.396E-02␣1.443E-02␣2.128E-02␣2.128E-02
␣1.521E+00␣1.525E-02␣1.311E+00␣1.433E-02␣1.309E-02␣1.117E+00␣9.137E-03
␣1.408E+00␣1.551E-02␣1.213E+00␣1.370E-02␣1.228E-02␣1.043E+00␣8.327E-03
␣1.300E+00␣1.455E-02␣1.147E+00␣1.253E-02␣1.147E-02␣9.903E-01␣8.993E-03
␣1.227E+00␣1.306E-02␣1.094E+00␣1.169E-02␣1.154E-02␣9.465E-01␣9.504E-03
␣1.167E+00␣1.176E-02␣1.046E+00␣1.140E-02␣1.228E-02␣9.077E-01␣9.518E-03
␣1.115E+00␣1.012E-02␣1.004E+00␣1.184E-02␣1.327E-02␣8.718E-01␣9.344E-03
␣1.067E+00␣8.924E-03␣9.639E-01␣1.250E-02␣1.395E-02␣8.376E-01␣9.595E-03
␣1.022E+00␣8.981E-03␣9.255E-01␣1.273E-02␣1.415E-02␣8.047E-01␣1.031E-02
␣9.794E-01␣9.955E-03␣8.524E-01␣1.247E-02␣1.428E-02␣7.419E-01␣1.095E-02
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␣7.513E-01␣1.211E-02␣6.575E-01␣1.341E-02␣1.691E-02␣5.760E-01␣1.294E-02
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␣4.804E-02␣4.804E-02␣3.716E-02␣3.716E-02␣4.538E-02␣6.294E-02␣6.294E-02
␣2.926E-02␣2.926E-02␣2.504E-02␣2.504E-02␣3.059E-02␣5.059E-02␣5.059E-02
␣2.069E-02␣2.069E-02␣1.876E-02␣1.876E-02␣2.094E-02␣3.864E-02␣3.864E-02
␣1.764E-02␣1.764E-02␣1.508E-02␣1.508E-02␣1.582E-02␣2.867E-02␣2.867E-02

␣1.727E-02␣1.727E-02␣1.396E-02␣1.396E-02␣1.443E-02␣2.128E-02␣2.128E-02
␣1.521E+00␣1.525E-02␣1.311E+00␣1.433E-02␣1.309E-02␣1.117E+00␣9.137E-03
␣1.408E+00␣1.551E-02␣1.213E+00␣1.370E-02␣1.228E-02␣1.043E+00␣8.327E-03
␣1.300E+00␣1.455E-02␣1.147E+00␣1.253E-02␣1.147E-02␣9.903E-01␣8.993E-03
␣1.227E+00␣1.306E-02␣1.094E+00␣1.169E-02␣1.154E-02␣9.465E-01␣9.504E-03
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␣9.794E-01␣9.955E-03␣8.524E-01␣1.247E-02␣1.428E-02␣7.419E-01␣1.095E-02
␣8.980E-01␣1.072E-02␣7.834E-01␣1.229E-02␣1.486E-02␣6.829E-01␣1.133E-02
␣8.221E-01␣1.097E-02␣7.185E-01␣1.331E-02␣1.663E-02␣6.276E-01␣1.232E-02
␣7.513E-01␣1.211E-02␣6.575E-01␣1.341E-02␣1.691E-02␣5.760E-01␣1.294E-02
␣6.855E-01␣1.303E-02␣6.007E-01␣1.343E-02␣1.679E-02␣5.282E-01␣1.358E-02
␣6.239E-01␣1.396E-02␣5.477E-01␣1.296E-02␣1.613E-02␣4.836E-01␣1.358E-02
␣5.659E-01␣1.367E-02␣4.525E-01␣1.259E-02␣1.563E-02␣4.036E-01␣1.340E-02
␣4.603E-01␣1.285E-02␣3.693E-01␣1.290E-02␣1.585E-02␣3.356E-01␣1.394E-02
␣3.692E-01␣1.303E-02␣2.977E-01␣1.367E-02␣1.648E-02␣2.796E-01␣1.512E-02
␣2.959E-01␣1.434E-02␣2.384E-01␣1.399E-02␣1.673E-02␣2.341E-01␣1.569E-02
␣2.405E-01␣1.504E-02␣1.919E-01␣1.919E-01␣1.851E-01␣1.958E-01␣1.958E-01
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␣6.800E-02␣6.800E-02␣5.906E-02␣5.906E-02␣6.677E-02␣7.708E-02␣7.708E-02
␣4.804E-02␣4.804E-02␣3.716E-02␣3.716E-02␣4.538E-02␣6.294E-02␣6.294E-02
␣2.926E-02␣2.926E-02␣2.504E-02␣2.504E-02␣3.059E-02␣5.059E-02␣5.059E-02
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␣1.764E-02␣1.764E-02␣1.508E-02␣1.508E-02␣1.582E-02␣2.867E-02␣2.867E-02
␣1.727E-02␣1.727E-02␣1.396E-02␣1.396E-02␣1.443E-02␣2.128E-02␣2.128E-02
␣1.521E+00␣1.525E-02␣1.311E+00␣1.433E-02␣1.309E-02␣1.117E+00␣9.137E-03
␣1.408E+00␣1.551E-02␣1.213E+00␣1.370E-02␣1.228E-02␣1.043E+00␣8.327E-03
␣1.300E+00␣1.455E-02␣1.147E+00␣1.253E-02␣1.147E-02␣9.903E-01␣8.993E-03
␣1.227E+00␣1.306E-02␣1.094E+00␣1.169E-02␣1.154E-02␣9.465E-01␣9.504E-03
␣1.167E+00␣1.176E-02␣1.046E+00␣1.140E-02␣1.228E-02␣9.077E-01␣9.518E-03
␣1.115E+00␣1.012E-02␣1.004E+00␣1.184E-02␣1.327E-02␣8.718E-01␣9.344E-03
␣1.067E+00␣8.924E-03␣9.639E-01␣1.250E-02␣1.395E-02␣8.376E-01␣9.595E-03
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␣9.794E-01␣9.955E-03␣8.524E-01␣1.247E-02␣1.428E-02␣7.419E-01␣1.095E-02
␣8.980E-01␣1.072E-02␣7.834E-01␣1.229E-02␣1.486E-02␣6.829E-01␣1.133E-02
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␣7.513E-01␣1.211E-02␣6.575E-01␣1.341E-02␣1.691E-02␣5.760E-01␣1.294E-02

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␣6.800E-02␣6.800E-02␣5.906E-02␣5.906E-02␣6.677E-02␣7.708E-02␣7.708E-02
␣4.804E-02␣4.804E-02␣3.716E-02␣3.716E-02␣4.538E-02␣6.294E-02␣6.294E-02
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␣2.069E-02␣2.069E-02␣1.876E-02␣1.876E-02␣2.094E-02␣3.864E-02␣3.864E-02
␣1.764E-02␣1.764E-02␣1.508E-02␣1.508E-02␣1.582E-02␣2.867E-02␣2.867E-02
␣1.727E-02␣1.727E-02␣1.396E-02␣1.396E-02␣1.443E-02␣2.128E-02␣2.128E-02
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08/27/2011

C␣␣␣2␣␣␣␣3␣␣␣␣2␣␣␣-1␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣306.25␣␣␣␣-6
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␣0.500␣1.1167␣0.0591␣0.722␣0.675␣0.8357␣0.0445␣0.707␣0.870␣0.6569␣0.0345␣0.678
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␣␣␣12␣␣␣␣1␣␣239␣␣␣␣0
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␣␣␣29␣␣␣␣7
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␣␣␣␣␣␣␣␣60␣␣␣␣␣␣␣␣70␣␣␣␣␣␣␣␣80␣␣␣␣␣␣␣␣90␣␣␣␣␣␣␣100␣␣␣␣␣␣␣␣110␣␣␣␣␣␣␣␣120␣␣␣␣␣␣␣␣130
␣␣␣␣␣␣␣140␣␣␣␣␣␣␣␣150␣␣␣␣␣␣␣␣160␣␣␣␣␣␣␣␣170␣␣␣␣␣␣␣␣180
␣␣␣␣␣␣0.340␣␣␣␣␣␣0.380␣␣␣␣␣␣0.400␣␣␣␣␣␣0.500␣␣␣␣␣␣0.675␣␣␣␣␣␣0.870␣␣␣␣␣␣1.020
␣1.143E+01␣1.186E-02␣5.983E+00␣1.114E-02␣1.012E-02␣5.194E+00␣7.244E-03
␣6.207E+00␣1.296E-02␣3.373E+00␣1.083E-02␣9.248E-03␣3.123E+00␣6.553E-03
␣3.492E+00␣1.177E-02␣2.455E+00␣9.641E-03␣7.996E-03␣2.317E+00␣8.327E-03

␣2.546E+00␣1.078E-02␣1.982E+00␣8.446E-03␣8.138E-03␣1.889E+00␣9.343E-03
␣2.058E+00␣9.799E-03␣1.688E+00␣8.291E-03␣9.489E-03␣1.619E+00␣8.795E-03
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␣1.378E+00␣6.885E-03␣1.208E+00␣1.165E-02␣1.166E-02␣1.169E+00␣9.365E-03
␣1.250E+00␣9.323E-03␣1.022E+00␣1.102E-02␣1.144E-02␣9.879E-01␣1.031E-02
␣1.052E+00␣1.072E-02␣8.809E-01␣1.078E-02␣1.255E-02␣8.498E-01␣1.028E-02
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␣6.943E-01␣1.626E-02␣6.001E-01␣1.516E-02␣1.751E-02␣5.742E-01␣1.541E-02
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␣1.143E+01␣1.186E-02␣5.983E+00␣1.114E-02␣1.012E-02␣5.194E+00␣7.244E-03
␣6.207E+00␣1.296E-02␣3.373E+00␣1.083E-02␣9.248E-03␣3.123E+00␣6.553E-03
␣3.492E+00␣1.177E-02␣2.455E+00␣9.641E-03␣7.996E-03␣2.317E+00␣8.327E-03
␣2.546E+00␣1.078E-02␣1.982E+00␣8.446E-03␣8.138E-03␣1.889E+00␣9.343E-03
␣2.058E+00␣9.799E-03␣1.688E+00␣8.291E-03␣9.489E-03␣1.619E+00␣8.795E-03
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␣1.539E+00␣6.068E-03␣1.330E+00␣1.119E-02␣1.195E-02␣1.285E+00␣7.920E-03
␣1.378E+00␣6.885E-03␣1.208E+00␣1.165E-02␣1.166E-02␣1.169E+00␣9.365E-03
␣1.250E+00␣9.323E-03␣1.022E+00␣1.102E-02␣1.144E-02␣9.879E-01␣1.031E-02
␣1.052E+00␣1.072E-02␣8.809E-01␣1.078E-02␣1.255E-02␣8.498E-01␣1.028E-02
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␣6.154E-01␣1.829E-02␣5.356E-01␣1.348E-02␣1.528E-02␣5.095E-01␣1.425E-02
␣5.454E-01␣1.682E-02␣4.289E-01␣1.173E-02␣1.334E-02␣4.010E-01␣1.223E-02
␣4.233E-01␣1.358E-02␣3.392E-01␣1.158E-02␣1.309E-02␣3.147E-01␣1.252E-02

␣3.221E-01␣1.290E-02␣2.627E-01␣1.279E-02␣1.409E-02␣2.510E-01␣1.520E-02
␣2.451E-01␣1.544E-02␣1.997E-01␣1.303E-02␣1.418E-02␣2.057E-01␣1.644E-02
␣1.995E-01␣1.676E-02␣1.567E-01␣1.567E-01␣1.483E-01␣1.717E-01␣1.717E-01
␣1.694E-01␣1.694E-01␣1.283E-01␣1.283E-01␣1.192E-01␣1.386E-01␣1.386E-01
␣1.427E-01␣1.427E-01␣1.079E-01␣1.079E-01␣1.020E-01␣1.062E-01␣1.062E-01
␣1.149E-01␣1.149E-01␣8.994E-02␣8.994E-02␣8.828E-02␣8.069E-02␣8.069E-02
␣8.688E-02␣8.688E-02␣7.153E-02␣7.153E-02␣7.368E-02␣6.447E-02␣6.447E-02
␣6.220E-02␣6.220E-02␣5.321E-02␣5.321E-02␣5.844E-02␣5.559E-02␣5.559E-02
␣4.300E-02␣4.300E-02␣3.224E-02␣3.224E-02␣3.943E-02␣4.824E-02␣4.824E-02
␣2.567E-02␣2.567E-02␣2.248E-02␣2.248E-02␣2.672E-02␣4.037E-02␣4.037E-02
␣1.826E-02␣1.826E-02␣1.740E-02␣1.740E-02␣1.765E-02␣3.024E-02␣3.024E-02
␣1.516E-02␣1.516E-02␣1.267E-02␣1.267E-02␣1.253E-02␣2.212E-02␣2.212E-02
␣1.533E-02␣1.533E-02␣1.107E-02␣1.107E-02␣1.190E-02␣1.707E-02␣1.707E-02
␣1.143E+01␣1.186E-02␣5.983E+00␣1.114E-02␣1.012E-02␣5.194E+00␣7.244E-03
␣6.207E+00␣1.296E-02␣3.373E+00␣1.083E-02␣9.248E-03␣3.123E+00␣6.553E-03
␣3.492E+00␣1.177E-02␣2.455E+00␣9.641E-03␣7.996E-03␣2.317E+00␣8.327E-03
␣2.546E+00␣1.078E-02␣1.982E+00␣8.446E-03␣8.138E-03␣1.889E+00␣9.343E-03
␣2.058E+00␣9.799E-03␣1.688E+00␣8.291E-03␣9.489E-03␣1.619E+00␣8.795E-03
␣1.752E+00␣7.699E-03␣1.484E+00␣9.594E-03␣1.117E-02␣1.430E+00␣7.706E-03
␣1.539E+00␣6.068E-03␣1.330E+00␣1.119E-02␣1.195E-02␣1.285E+00␣7.920E-03
␣1.378E+00␣6.885E-03␣1.208E+00␣1.165E-02␣1.166E-02␣1.169E+00␣9.365E-03
␣1.250E+00␣9.323E-03␣1.022E+00␣1.102E-02␣1.144E-02␣9.879E-01␣1.031E-02
␣1.052E+00␣1.072E-02␣8.809E-01␣1.078E-02␣1.255E-02␣8.498E-01␣1.028E-02
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␣7.887E-01␣1.500E-02␣6.768E-01␣1.529E-02␣1.829E-02␣6.497E-01␣1.429E-02
␣6.943E-01␣1.626E-02␣6.001E-01␣1.516E-02␣1.751E-02␣5.742E-01␣1.541E-02
␣6.154E-01␣1.829E-02␣5.356E-01␣1.348E-02␣1.528E-02␣5.095E-01␣1.425E-02
␣5.454E-01␣1.682E-02␣4.289E-01␣1.173E-02␣1.334E-02␣4.010E-01␣1.223E-02
␣4.233E-01␣1.358E-02␣3.392E-01␣1.158E-02␣1.309E-02␣3.147E-01␣1.252E-02
␣3.221E-01␣1.290E-02␣2.627E-01␣1.279E-02␣1.409E-02␣2.510E-01␣1.520E-02
␣2.451E-01␣1.544E-02␣1.997E-01␣1.303E-02␣1.418E-02␣2.057E-01␣1.644E-02
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␣1.694E-01␣1.694E-01␣1.283E-01␣1.283E-01␣1.192E-01␣1.386E-01␣1.386E-01
␣1.427E-01␣1.427E-01␣1.079E-01␣1.079E-01␣1.020E-01␣1.062E-01␣1.062E-01
␣1.149E-01␣1.149E-01␣8.994E-02␣8.994E-02␣8.828E-02␣8.069E-02␣8.069E-02
␣8.688E-02␣8.688E-02␣7.153E-02␣7.153E-02␣7.368E-02␣6.447E-02␣6.447E-02
␣6.220E-02␣6.220E-02␣5.321E-02␣5.321E-02␣5.844E-02␣5.559E-02␣5.559E-02
␣4.300E-02␣4.300E-02␣3.224E-02␣3.224E-02␣3.943E-02␣4.824E-02␣4.824E-02
␣2.567E-02␣2.567E-02␣2.248E-02␣2.248E-02␣2.672E-02␣4.037E-02␣4.037E-02
␣1.826E-02␣1.826E-02␣1.740E-02␣1.740E-02␣1.765E-02␣3.024E-02␣3.024E-02
␣1.516E-02␣1.516E-02␣1.267E-02␣1.267E-02␣1.253E-02␣2.212E-02␣2.212E-02
␣1.533E-02␣1.533E-02␣1.107E-02␣1.107E-02␣1.190E-02␣1.707E-02␣1.707E-02

␣1.143E+01␣1.186E-02␣5.983E+00␣1.114E-02␣1.012E-02␣5.194E+00␣7.244E-03
␣6.207E+00␣1.296E-02␣3.373E+00␣1.083E-02␣9.248E-03␣3.123E+00␣6.553E-03
␣3.492E+00␣1.177E-02␣2.455E+00␣9.641E-03␣7.996E-03␣2.317E+00␣8.327E-03
␣2.546E+00␣1.078E-02␣1.982E+00␣8.446E-03␣8.138E-03␣1.889E+00␣9.343E-03
␣2.058E+00␣9.799E-03␣1.688E+00␣8.291E-03␣9.489E-03␣1.619E+00␣8.795E-03
␣1.752E+00␣7.699E-03␣1.484E+00␣9.594E-03␣1.117E-02␣1.430E+00␣7.706E-03
␣1.539E+00␣6.068E-03␣1.330E+00␣1.119E-02␣1.195E-02␣1.285E+00␣7.920E-03
␣1.378E+00␣6.885E-03␣1.208E+00␣1.165E-02␣1.166E-02␣1.169E+00␣9.365E-03
␣1.250E+00␣9.323E-03␣1.022E+00␣1.102E-02␣1.144E-02␣9.879E-01␣1.031E-02
␣1.052E+00␣1.072E-02␣8.809E-01␣1.078E-02␣1.255E-02␣8.498E-01␣1.028E-02
␣9.049E-01␣1.065E-02␣7.686E-01␣1.588E-02␣1.899E-02␣7.398E-01␣1.402E-02
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␣6.943E-01␣1.626E-02␣6.001E-01␣1.516E-02␣1.751E-02␣5.742E-01␣1.541E-02
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␣3.221E-01␣1.290E-02␣2.627E-01␣1.279E-02␣1.409E-02␣2.510E-01␣1.520E-02
␣2.451E-01␣1.544E-02␣1.997E-01␣1.303E-02␣1.418E-02␣2.057E-01␣1.644E-02
␣1.995E-01␣1.676E-02␣1.567E-01␣1.567E-01␣1.483E-01␣1.717E-01␣1.717E-01
␣1.694E-01␣1.694E-01␣1.283E-01␣1.283E-01␣1.192E-01␣1.386E-01␣1.386E-01
␣1.427E-01␣1.427E-01␣1.079E-01␣1.079E-01␣1.020E-01␣1.062E-01␣1.062E-01
␣1.149E-01␣1.149E-01␣8.994E-02␣8.994E-02␣8.828E-02␣8.069E-02␣8.069E-02
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␣4.300E-02␣4.300E-02␣3.224E-02␣3.224E-02␣3.943E-02␣4.824E-02␣4.824E-02
␣2.567E-02␣2.567E-02␣2.248E-02␣2.248E-02␣2.672E-02␣4.037E-02␣4.037E-02
␣1.826E-02␣1.826E-02␣1.740E-02␣1.740E-02␣1.765E-02␣3.024E-02␣3.024E-02
␣1.516E-02␣1.516E-02␣1.267E-02␣1.267E-02␣1.253E-02␣2.212E-02␣2.212E-02
␣1.533E-02␣1.533E-02␣1.107E-02␣1.107E-02␣1.190E-02␣1.707E-02␣1.707E-02
␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣1.1␣␣␣␣␣0.005␣␣␣␣␣␣0.01RM␣27aug11MGA␣␣␣T
␣␣␣␣0

C.3 At RailroadValley

07/30/2006

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C␣␣␣2␣␣␣␣3␣␣␣␣2␣␣␣-1␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣306.25␣␣␣␣-1
FFF␣0␣␣␣␣0␣390.00000␣␣␣␣g␣1.26␣␣␣a␣0.25␣01␣F␣T␣F␣F
DATA/Filter/ASTER_vnir.flt
␣␣␣␣7␣␣␣␣0USS␣0␣␣␣10␣␣␣␣0␣␣␣␣0␣␣␣␣␣␣␣48.77700␣␣0.0␣␣␣␣␣␣␣0.0␣␣␣␣␣␣.000␣␣␣␣␣1.434
␣␣␣␣7␣␣␣␣0␣␣␣␣0␣␣␣␣0
␣1.000E+00Boundary␣Layer
␣0.340␣1.6092␣0.0713␣0.730␣0.360␣1.4420␣0.0643␣0.724␣0.400␣1.3708␣0.0602␣0.715
␣0.500␣1.1440␣0.0499␣0.707␣0.675␣0.7891␣0.0361␣0.686␣0.870␣0.5816␣0.0271␣0.647
␣1.020␣0.4762␣0.0231␣0.665
␣␣␣705.000␣␣␣␣␣␣.000␣␣␣180.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣0
␣␣␣12␣␣␣␣1␣␣211␣␣␣␣0
-133.56130␣␣25.93954␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000
␣␣␣29␣␣␣␣7
␣␣␣␣␣␣␣0.0␣␣␣␣␣␣␣0.2␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣0.6␣␣␣␣␣␣␣0.8␣␣␣␣␣␣␣1.0␣␣␣␣␣␣␣1.5␣␣␣␣␣␣␣␣␣2
␣␣␣␣␣␣␣␣␣3␣␣␣␣␣␣␣␣4␣␣␣␣␣␣␣␣␣5␣␣␣␣␣␣␣␣10␣␣␣␣␣␣␣␣20␣␣␣␣␣␣␣␣30␣␣␣␣␣␣␣␣40␣␣␣␣␣␣␣␣50
␣␣␣␣␣␣␣␣60␣␣␣␣␣␣␣␣70␣␣␣␣␣␣␣␣80␣␣␣␣␣␣␣␣90␣␣␣␣␣␣␣␣100␣␣␣␣␣␣␣␣110␣␣␣␣␣␣␣␣120␣␣␣␣␣␣␣␣130
␣␣␣␣␣␣␣␣140␣␣␣␣␣␣␣␣150␣␣␣␣␣␣␣␣160␣␣␣␣␣␣␣␣170␣␣␣␣␣␣␣␣180
␣␣␣␣␣␣0.340␣␣␣␣␣␣0.380␣␣␣␣␣␣0.400␣␣␣␣␣␣0.500␣␣␣␣␣␣0.675␣␣␣␣␣␣0.870␣␣␣␣␣␣1.020
␣5.223E+00␣1.292E-02␣3.298E+00␣1.217E-02␣1.106E-02␣2.887E+00␣7.720E-03
␣3.465E+00␣1.378E-02␣2.285E+00␣1.171E-02␣1.014E-02␣2.088E+00␣7.043E-03
␣2.397E+00␣1.270E-02␣1.857E+00␣1.050E-02␣9.007E-03␣1.719E+00␣8.491E-03
␣1.949E+00␣1.151E-02␣1.607E+00␣9.407E-03␣9.131E-03␣1.498E+00␣9.345E-03
␣1.687E+00␣1.037E-02␣1.438E+00␣9.219E-03␣1.031E-02␣1.345E+00␣8.998E-03
␣1.506E+00␣8.380E-03␣1.309E+00␣1.027E-02␣1.180E-02␣1.230E+00␣8.212E-03
␣1.370E+00␣6.883E-03␣1.207E+00␣1.158E-02␣1.259E-02␣1.135E+00␣8.406E-03
␣1.260E+00␣7.463E-03␣1.121E+00␣1.199E-02␣1.247E-02␣1.054E+00␣9.563E-03
␣1.167E+00␣9.448E-03␣9.787E-01␣1.149E-02␣1.237E-02␣9.197E-01␣1.039E-02
␣1.015E+00␣1.068E-02␣8.637E-01␣1.125E-02␣1.328E-02␣8.102E-01␣1.051E-02
␣8.927E-01␣1.076E-02␣7.669E-01␣1.456E-02␣1.776E-02␣7.182E-01␣1.293E-02
␣7.909E-01␣1.368E-02␣6.839E-01␣1.437E-02␣1.757E-02␣6.397E-01␣1.343E-02
␣7.044E-01␣1.498E-02␣6.120E-01␣1.429E-02␣1.701E-02␣5.716E-01␣1.435E-02
␣6.291E-01␣1.663E-02␣5.494E-01␣1.302E-02␣1.529E-02␣5.117E-01␣1.359E-02
␣5.613E-01␣1.556E-02␣4.430E-01␣1.175E-02␣1.384E-02␣4.094E-01␣1.226E-02
␣4.414E-01␣1.316E-02␣3.529E-01␣1.180E-02␣1.377E-02␣3.268E-01␣1.268E-02
␣3.412E-01␣1.282E-02␣2.763E-01␣1.290E-02␣1.468E-02␣2.639E-01␣1.486E-02
␣2.646E-01␣1.496E-02␣2.138E-01␣1.323E-02␣1.488E-02␣2.172E-01␣1.591E-02
␣2.148E-01␣1.613E-02␣1.692E-01␣1.692E-01␣1.609E-01␣1.805E-01␣1.805E-01
␣1.800E-01␣1.800E-01␣1.380E-01␣1.380E-01␣1.297E-01␣1.462E-01␣1.462E-01
␣1.495E-01␣1.495E-01␣1.146E-01␣1.146E-01␣1.097E-01␣1.142E-01␣1.142E-01
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␣8.985E-02␣8.985E-02␣7.428E-02␣7.428E-02␣7.758E-02␣7.221E-02␣7.221E-02
␣6.437E-02␣6.437E-02␣5.532E-02␣5.532E-02␣6.154E-02␣6.215E-02␣6.215E-02
␣4.460E-02␣4.460E-02␣3.385E-02␣3.385E-02␣4.157E-02␣5.285E-02␣5.285E-02
␣2.656E-02␣2.656E-02␣2.318E-02␣2.318E-02␣2.799E-02␣4.375E-02␣4.375E-02
␣1.876E-02␣1.876E-02␣1.770E-02␣1.770E-02␣1.860E-02␣3.309E-02␣3.309E-02
␣1.582E-02␣1.582E-02␣1.332E-02␣1.332E-02␣1.345E-02␣2.431E-02␣2.431E-02
␣1.591E-02␣1.591E-02␣1.189E-02␣1.189E-02␣1.260E-02␣1.841E-02␣1.841E-02
␣5.223E+00␣1.292E-02␣3.298E+00␣1.217E-02␣1.106E-02␣2.887E+00␣7.720E-03
␣3.465E+00␣1.378E-02␣2.285E+00␣1.171E-02␣1.014E-02␣2.088E+00␣7.043E-03
␣2.397E+00␣1.270E-02␣1.857E+00␣1.050E-02␣9.007E-03␣1.719E+00␣8.491E-03
␣1.949E+00␣1.151E-02␣1.607E+00␣9.407E-03␣9.131E-03␣1.498E+00␣9.345E-03
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␣1.260E+00␣7.463E-03␣1.121E+00␣1.199E-02␣1.247E-02␣1.054E+00␣9.563E-03
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␣3.465E+00␣1.378E-02␣2.285E+00␣1.171E-02␣1.014E-02␣2.088E+00␣7.043E-03
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␣1.370E+00␣6.883E-03␣1.207E+00␣1.158E-02␣1.259E-02␣1.135E+00␣8.406E-03
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␣1.167E+00␣9.448E-03␣9.787E-01␣1.149E-02␣1.237E-02␣9.197E-01␣1.039E-02
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␣␣␣␣0

09/21/2008

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␣␣␣␣␣␣␣␣3␣␣␣␣␣␣␣␣4␣␣␣␣␣␣␣␣5␣␣␣␣␣␣␣10␣␣␣␣␣␣␣20␣␣␣␣␣␣␣30␣␣␣␣␣␣␣40␣␣␣␣␣␣␣50
␣␣␣␣␣␣␣60␣␣␣␣␣␣␣70␣␣␣␣␣␣␣80␣␣␣␣␣␣␣90␣␣␣␣␣␣100␣␣␣␣␣␣110␣␣␣␣␣␣120␣␣␣␣␣␣130
␣␣␣␣␣␣␣140␣␣␣␣␣␣␣150␣␣␣␣␣␣160␣␣␣␣␣␣170␣␣␣␣␣␣180
␣␣␣␣␣0.340␣␣␣␣␣0.380␣␣␣␣␣0.400␣␣␣␣␣0.500␣␣␣␣␣0.675␣␣␣␣␣0.870␣␣␣␣␣1.020
␣8.911E+00␣1.220E-02␣4.938E+00␣1.147E-02␣1.042E-02␣4.301E+00␣7.387E-03
␣5.142E+00␣1.323E-02␣2.974E+00␣1.111E-02␣9.529E-03␣2.745E+00␣6.706E-03
␣3.093E+00␣1.207E-02␣2.244E+00␣9.909E-03␣8.307E-03␣2.107E+00␣8.386E-03
␣2.337E+00␣1.102E-02␣1.854E+00␣8.745E-03␣8.445E-03␣1.756E+00␣9.355E-03
␣1.931E+00␣9.980E-03␣1.605E+00␣8.584E-03␣9.745E-03␣1.530E+00␣8.868E-03
␣1.671E+00␣7.909E-03␣1.427E+00␣9.808E-03␣1.138E-02␣1.365E+00␣7.872E-03
␣1.486E+00␣6.318E-03␣1.292E+00␣1.133E-02␣1.216E-02␣1.239E+00␣8.076E-03
␣1.341E+00␣7.064E-03␣1.181E+00␣1.177E-02␣1.192E-02␣1.134E+00␣9.430E-03
␣1.225E+00␣9.371E-03␣1.010E+00␣1.118E-02␣1.175E-02␣9.685E-01␣1.034E-02

␣1.042E+00␣1.072E-02␣8.775E-01␣1.094E-02␣1.279E-02␣8.396E-01␣1.036E-02
␣9.031E-01␣1.070E-02␣7.699E-01␣1.544E-02␣1.857E-02␣7.350E-01␣1.363E-02
␣7.912E-01␣1.456E-02␣6.806E-01␣1.500E-02␣1.806E-02␣6.483E-01␣1.400E-02
␣6.990E-01␣1.586E-02␣6.052E-01␣1.488E-02␣1.736E-02␣5.749E-01␣1.505E-02
␣6.210E-01␣1.777E-02␣5.411E-01␣1.332E-02␣1.527E-02␣5.114E-01␣1.401E-02
␣5.514E-01␣1.643E-02␣4.340E-01␣1.172E-02␣1.349E-02␣4.045E-01␣1.222E-02
␣4.296E-01␣1.345E-02␣3.439E-01␣1.164E-02␣1.329E-02␣3.191E-01␣1.255E-02
␣3.285E-01␣1.287E-02␣2.672E-01␣1.282E-02␣1.426E-02␣2.554E-01␣1.508E-02
␣2.515E-01␣1.530E-02␣2.043E-01␣1.310E-02␣1.440E-02␣2.096E-01␣1.627E-02
␣2.044E-01␣1.658E-02␣1.607E-01␣1.607E-01␣1.523E-01␣1.746E-01␣1.746E-01
␣1.729E-01␣1.729E-01␣1.314E-01␣1.314E-01␣1.225E-01␣1.410E-01␣1.410E-01
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␣1.164E-01␣1.164E-01␣9.137E-02␣9.137E-02␣9.002E-02␣8.323E-02␣8.323E-02
␣8.791E-02␣8.791E-02␣7.247E-02␣7.247E-02␣7.497E-02␣6.683E-02␣6.683E-02
␣6.294E-02␣6.294E-02␣5.391E-02␣5.391E-02␣5.947E-02␣5.760E-02␣5.760E-02
␣4.352E-02␣4.352E-02␣3.276E-02␣3.276E-02␣4.013E-02␣4.967E-02␣4.967E-02
␣2.594E-02␣2.594E-02␣2.270E-02␣2.270E-02␣2.713E-02␣4.144E-02␣4.144E-02
␣1.841E-02␣1.841E-02␣1.750E-02␣1.750E-02␣1.794E-02␣3.115E-02␣3.115E-02
␣1.537E-02␣1.537E-02␣1.287E-02␣1.287E-02␣1.281E-02␣2.282E-02␣2.282E-02
␣1.552E-02␣1.552E-02␣1.132E-02␣1.132E-02␣1.211E-02␣1.750E-02␣1.750E-02
␣8.911E+00␣1.220E-02␣4.938E+00␣1.147E-02␣1.042E-02␣4.301E+00␣7.387E-03
␣5.142E+00␣1.323E-02␣2.974E+00␣1.111E-02␣9.529E-03␣2.745E+00␣6.706E-03
␣3.093E+00␣1.207E-02␣2.244E+00␣9.909E-03␣8.307E-03␣2.107E+00␣8.386E-03
␣2.337E+00␣1.102E-02␣1.854E+00␣8.745E-03␣8.445E-03␣1.756E+00␣9.355E-03
␣1.931E+00␣9.980E-03␣1.605E+00␣8.584E-03␣9.745E-03␣1.530E+00␣8.868E-03
␣1.671E+00␣7.909E-03␣1.427E+00␣9.808E-03␣1.138E-02␣1.365E+00␣7.872E-03
␣1.486E+00␣6.318E-03␣1.292E+00␣1.133E-02␣1.216E-02␣1.239E+00␣8.076E-03
␣1.341E+00␣7.064E-03␣1.181E+00␣1.177E-02␣1.192E-02␣1.134E+00␣9.430E-03
␣1.225E+00␣9.371E-03␣1.010E+00␣1.118E-02␣1.175E-02␣9.685E-01␣1.034E-02
␣1.042E+00␣1.072E-02␣8.775E-01␣1.094E-02␣1.279E-02␣8.396E-01␣1.036E-02
␣9.031E-01␣1.070E-02␣7.699E-01␣1.544E-02␣1.857E-02␣7.350E-01␣1.363E-02
␣7.912E-01␣1.456E-02␣6.806E-01␣1.500E-02␣1.806E-02␣6.483E-01␣1.400E-02
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␣3.285E-01␣1.287E-02␣2.672E-01␣1.282E-02␣1.426E-02␣2.554E-01␣1.508E-02
␣2.515E-01␣1.530E-02␣2.043E-01␣1.310E-02␣1.440E-02␣2.096E-01␣1.627E-02
␣2.044E-01␣1.658E-02␣1.607E-01␣1.607E-01␣1.523E-01␣1.746E-01␣1.746E-01
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␣1.841E-02␣1.841E-02␣1.750E-02␣1.750E-02␣1.794E-02␣3.115E-02␣3.115E-02
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␣1.552E-02␣1.552E-02␣1.132E-02␣1.132E-02␣1.211E-02␣1.750E-02␣1.750E-02
␣8.911E+00␣1.220E-02␣4.938E+00␣1.147E-02␣1.042E-02␣4.301E+00␣7.387E-03
␣5.142E+00␣1.323E-02␣2.974E+00␣1.111E-02␣9.529E-03␣2.745E+00␣6.706E-03
␣3.093E+00␣1.207E-02␣2.244E+00␣9.909E-03␣8.307E-03␣2.107E+00␣8.386E-03
␣2.337E+00␣1.102E-02␣1.854E+00␣8.745E-03␣8.445E-03␣1.756E+00␣9.355E-03
␣1.931E+00␣9.980E-03␣1.605E+00␣8.584E-03␣9.745E-03␣1.530E+00␣8.868E-03
␣1.671E+00␣7.909E-03␣1.427E+00␣9.808E-03␣1.138E-02␣1.365E+00␣7.872E-03
␣1.486E+00␣6.318E-03␣1.292E+00␣1.133E-02␣1.216E-02␣1.239E+00␣8.076E-03
␣1.341E+00␣7.064E-03␣1.181E+00␣1.177E-02␣1.192E-02␣1.134E+00␣9.430E-03
␣1.225E+00␣9.371E-03␣1.010E+00␣1.118E-02␣1.175E-02␣9.685E-01␣1.034E-02
␣1.042E+00␣1.072E-02␣8.775E-01␣1.094E-02␣1.279E-02␣8.396E-01␣1.036E-02
␣9.031E-01␣1.070E-02␣7.699E-01␣1.544E-02␣1.857E-02␣7.350E-01␣1.363E-02
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␣6.990E-01␣1.586E-02␣6.052E-01␣1.488E-02␣1.736E-02␣5.749E-01␣1.505E-02
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␣4.296E-01␣1.345E-02␣3.439E-01␣1.164E-02␣1.329E-02␣3.191E-01␣1.255E-02
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␣1.164E-01␣1.164E-01␣9.137E-02␣9.137E-02␣9.002E-02␣8.323E-02␣8.323E-02
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␣1.537E-02␣1.537E-02␣1.287E-02␣1.287E-02␣1.281E-02␣2.282E-02␣2.282E-02
␣1.552E-02␣1.552E-02␣1.132E-02␣1.132E-02␣1.211E-02␣1.750E-02␣1.750E-02
␣8.911E+00␣1.220E-02␣4.938E+00␣1.147E-02␣1.042E-02␣4.301E+00␣7.387E-03
␣5.142E+00␣1.323E-02␣2.974E+00␣1.111E-02␣9.529E-03␣2.745E+00␣6.706E-03
␣3.093E+00␣1.207E-02␣2.244E+00␣9.909E-03␣8.307E-03␣2.107E+00␣8.386E-03
␣2.337E+00␣1.102E-02␣1.854E+00␣8.745E-03␣8.445E-03␣1.756E+00␣9.355E-03
␣1.931E+00␣9.980E-03␣1.605E+00␣8.584E-03␣9.745E-03␣1.530E+00␣8.868E-03
␣1.671E+00␣7.909E-03␣1.427E+00␣9.808E-03␣1.138E-02␣1.365E+00␣7.872E-03

␣1.486E+00␣6.318E-03␣1.292E+00␣1.133E-02␣1.216E-02␣1.239E+00␣8.076E-03
␣1.341E+00␣7.064E-03␣1.181E+00␣1.177E-02␣1.192E-02␣1.134E+00␣9.430E-03
␣1.225E+00␣9.371E-03␣1.010E+00␣1.118E-02␣1.175E-02␣9.685E-01␣1.034E-02
␣1.042E+00␣1.072E-02␣8.775E-01␣1.094E-02␣1.279E-02␣8.396E-01␣1.036E-02
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␣6.990E-01␣1.586E-02␣6.052E-01␣1.488E-02␣1.736E-02␣5.749E-01␣1.505E-02
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␣3.285E-01␣1.287E-02␣2.672E-01␣1.282E-02␣1.426E-02␣2.554E-01␣1.508E-02
␣2.515E-01␣1.530E-02␣2.043E-01␣1.310E-02␣1.440E-02␣2.096E-01␣1.627E-02
␣2.044E-01␣1.658E-02␣1.607E-01␣1.607E-01␣1.523E-01␣1.746E-01␣1.746E-01
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␣8.791E-02␣8.791E-02␣7.247E-02␣7.247E-02␣7.497E-02␣6.683E-02␣6.683E-02
␣6.294E-02␣6.294E-02␣5.391E-02␣5.391E-02␣5.947E-02␣5.760E-02␣5.760E-02
␣4.352E-02␣4.352E-02␣3.276E-02␣3.276E-02␣4.013E-02␣4.967E-02␣4.967E-02
␣2.594E-02␣2.594E-02␣2.270E-02␣2.270E-02␣2.713E-02␣4.144E-02␣4.144E-02
␣1.841E-02␣1.841E-02␣1.750E-02␣1.750E-02␣1.794E-02␣3.115E-02␣3.115E-02
␣1.537E-02␣1.537E-02␣1.287E-02␣1.287E-02␣1.281E-02␣2.282E-02␣2.282E-02
␣1.552E-02␣1.552E-02␣1.132E-02␣1.132E-02␣1.211E-02␣1.750E-02␣1.750E-02
␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣1.1␣␣␣␣␣0.005␣␣␣␣␣␣0.01RM␣21sep08MGA␣␣␣T
␣␣␣␣0

09/08/2009

C␣␣␣2␣␣␣␣3␣␣␣␣2␣␣␣-1␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣306.25␣␣␣␣␣-3
FFF␣0␣␣␣␣0␣390.00000␣␣␣␣g␣0.52␣␣␣a␣0.26␣01␣F␣T␣F␣F
DATA/Filter/ASTER_vnir.flt
␣␣␣␣7␣␣␣␣0USS␣0␣␣␣10␣␣␣␣0␣␣␣␣0␣␣␣␣␣␣␣93.75257␣␣0.0␣␣␣␣␣␣␣0.0␣␣␣␣␣␣.000␣␣␣␣␣1.434
␣␣␣␣7␣␣␣␣0␣␣␣␣0␣␣␣␣0
␣1.000E+00Boundary␣Layer
␣0.340␣1.4791␣0.0792␣0.737␣0.360␣1.3470␣0.0719␣0.733␣0.400␣1.2957␣0.0679␣0.726
␣0.500␣1.1210␣0.0573␣0.720␣0.675␣0.8284␣0.0428␣0.704␣0.870␣0.6448␣0.0331␣0.674
␣1.020␣0.5495␣0.0286␣0.690
␣␣␣705.000␣␣␣␣␣␣.000␣␣␣180.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣0
␣␣␣12␣␣␣␣1␣␣251␣␣␣␣0
-149.56911␣␣35.94913␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000
␣␣␣29␣␣␣␣7
␣␣␣␣␣␣␣0.0␣␣␣␣␣␣␣0.2␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣0.6␣␣␣␣␣␣␣0.8␣␣␣␣␣␣␣1.0␣␣␣␣␣␣␣1.5␣␣␣␣␣␣␣␣␣2
␣␣␣␣␣␣␣␣␣3␣␣␣␣␣␣␣␣4␣␣␣␣␣␣␣␣␣5␣␣␣␣␣␣␣␣10␣␣␣␣␣␣␣␣20␣␣␣␣␣␣␣␣30␣␣␣␣␣␣␣␣40␣␣␣␣␣␣␣␣50

␣␣␣␣␣␣␣␣60␣␣␣␣␣␣␣␣70␣␣␣␣␣␣␣␣80␣␣␣␣␣␣␣␣90␣␣␣␣␣␣␣␣100␣␣␣␣␣␣␣␣110␣␣␣␣␣␣␣␣120␣␣␣␣␣␣␣␣130
␣␣␣␣␣␣␣␣140␣␣␣␣␣␣␣␣150␣␣␣␣␣␣␣␣160␣␣␣␣␣␣␣␣170␣␣␣␣␣␣␣␣180
␣␣␣␣␣␣0.340␣␣␣␣␣␣0.380␣␣␣␣␣␣0.400␣␣␣␣␣␣0.500␣␣␣␣␣␣0.675␣␣␣␣␣␣0.870␣␣␣␣␣␣1.020
␣1.008E+01␣1.203E-02␣5.429E+00␣1.131E-02␣1.027E-02␣4.722E+00␣7.316E-03
␣5.643E+00␣1.309E-02␣3.165E+00␣1.098E-02␣9.388E-03␣2.926E+00␣6.631E-03
␣3.284E+00␣1.192E-02␣2.346E+00␣9.777E-03␣8.152E-03␣2.210E+00␣8.358E-03
␣2.438E+00␣1.090E-02␣1.916E+00␣8.598E-03␣8.293E-03␣1.821E+00␣9.347E-03
␣1.993E+00␣9.892E-03␣1.645E+00␣8.438E-03␣9.619E-03␣1.574E+00␣8.833E-03
␣1.712E+00␣7.805E-03␣1.456E+00␣9.699E-03␣1.128E-02␣1.397E+00␣7.791E-03
␣1.512E+00␣6.193E-03␣1.310E+00␣1.126E-02␣1.206E-02␣1.261E+00␣7.999E-03
␣1.360E+00␣6.975E-03␣1.196E+00␣1.171E-02␣1.179E-02␣1.151E+00␣9.398E-03
␣1.238E+00␣9.349E-03␣1.016E+00␣1.110E-02␣1.160E-02␣9.784E-01␣1.032E-02
␣1.048E+00␣1.072E-02␣8.794E-01␣1.086E-02␣1.266E-02␣8.449E-01␣1.032E-02
␣9.042E-01␣1.067E-02␣7.695E-01␣1.566E-02␣1.878E-02␣7.376E-01␣1.382E-02
␣7.902E-01␣1.478E-02␣6.789E-01␣1.514E-02␣1.817E-02␣6.492E-01␣1.414E-02
␣6.969E-01␣1.606E-02␣6.028E-01␣1.502E-02␣1.743E-02␣5.747E-01␣1.524E-02
␣6.183E-01␣1.804E-02␣5.386E-01␣1.340E-02␣1.528E-02␣5.107E-01␣1.413E-02
␣5.486E-01␣1.663E-02␣4.315E-01␣1.172E-02␣1.341E-02␣4.029E-01␣1.222E-02
␣4.266E-01␣1.351E-02␣3.417E-01␣1.161E-02␣1.320E-02␣3.170E-01␣1.254E-02
␣3.254E-01␣1.289E-02␣2.651E-01␣1.280E-02␣1.418E-02␣2.533E-01␣1.514E-02
␣2.484E-01␣1.537E-02␣2.021E-01␣1.307E-02␣1.429E-02␣2.077E-01␣1.635E-02
␣2.020E-01␣1.667E-02␣1.587E-01␣1.587E-01␣1.503E-01␣1.731E-01␣1.731E-01
␣1.711E-01␣1.711E-01␣1.299E-01␣1.299E-01␣1.208E-01␣1.398E-01␣1.398E-01
␣1.439E-01␣1.439E-01␣1.090E-01␣1.090E-01␣1.032E-01␣1.075E-01␣1.075E-01
␣1.157E-01␣1.157E-01␣9.067E-02␣9.067E-02␣8.916E-02␣8.197E-02␣8.197E-02
␣8.741E-02␣8.741E-02␣7.201E-02␣7.201E-02␣7.434E-02␣6.566E-02␣6.566E-02
␣6.259E-02␣6.259E-02␣5.357E-02␣5.357E-02␣5.897E-02␣5.659E-02␣5.659E-02
␣4.326E-02␣4.326E-02␣3.251E-02␣3.251E-02␣3.979E-02␣4.896E-02␣4.896E-02
␣2.581E-02␣2.581E-02␣2.259E-02␣2.259E-02␣2.694E-02␣4.091E-02␣4.091E-02
␣1.834E-02␣1.834E-02␣1.745E-02␣1.745E-02␣1.779E-02␣3.070E-02␣3.070E-02
␣1.527E-02␣1.527E-02␣1.277E-02␣1.277E-02␣1.267E-02␣2.246E-02␣2.246E-02
␣1.543E-02␣1.543E-02␣1.119E-02␣1.119E-02␣1.201E-02␣1.729E-02␣1.729E-02
␣1.008E+01␣1.203E-02␣5.429E+00␣1.131E-02␣1.027E-02␣4.722E+00␣7.316E-03
␣5.643E+00␣1.309E-02␣3.165E+00␣1.098E-02␣9.388E-03␣2.926E+00␣6.631E-03
␣3.284E+00␣1.192E-02␣2.346E+00␣9.777E-03␣8.152E-03␣2.210E+00␣8.358E-03
␣2.438E+00␣1.090E-02␣1.916E+00␣8.598E-03␣8.293E-03␣1.821E+00␣9.347E-03
␣1.993E+00␣9.892E-03␣1.645E+00␣8.438E-03␣9.619E-03␣1.574E+00␣8.833E-03
␣1.712E+00␣7.805E-03␣1.456E+00␣9.699E-03␣1.128E-02␣1.397E+00␣7.791E-03
␣1.512E+00␣6.193E-03␣1.310E+00␣1.126E-02␣1.206E-02␣1.261E+00␣7.999E-03
␣1.360E+00␣6.975E-03␣1.196E+00␣1.171E-02␣1.179E-02␣1.151E+00␣9.398E-03
␣1.238E+00␣9.349E-03␣1.016E+00␣1.110E-02␣1.160E-02␣9.784E-01␣1.032E-02
␣1.048E+00␣1.072E-02␣8.794E-01␣1.086E-02␣1.266E-02␣8.449E-01␣1.032E-02

␣9.042E-01␣1.067E-02␣7.695E-01␣1.566E-02␣1.878E-02␣7.376E-01␣1.382E-02
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␣6.969E-01␣1.606E-02␣6.028E-01␣1.502E-02␣1.743E-02␣5.747E-01␣1.524E-02
␣6.183E-01␣1.804E-02␣5.386E-01␣1.340E-02␣1.528E-02␣5.107E-01␣1.413E-02
␣5.486E-01␣1.663E-02␣4.315E-01␣1.172E-02␣1.341E-02␣4.029E-01␣1.222E-02
␣4.266E-01␣1.351E-02␣3.417E-01␣1.161E-02␣1.320E-02␣3.170E-01␣1.254E-02
␣3.254E-01␣1.289E-02␣2.651E-01␣1.280E-02␣1.418E-02␣2.533E-01␣1.514E-02
␣2.484E-01␣1.537E-02␣2.021E-01␣1.307E-02␣1.429E-02␣2.077E-01␣1.635E-02
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␣1.711E-01␣1.711E-01␣1.299E-01␣1.299E-01␣1.208E-01␣1.398E-01␣1.398E-01
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␣6.259E-02␣6.259E-02␣5.357E-02␣5.357E-02␣5.897E-02␣5.659E-02␣5.659E-02
␣4.326E-02␣4.326E-02␣3.251E-02␣3.251E-02␣3.979E-02␣4.896E-02␣4.896E-02
␣2.581E-02␣2.581E-02␣2.259E-02␣2.259E-02␣2.694E-02␣4.091E-02␣4.091E-02
␣1.834E-02␣1.834E-02␣1.745E-02␣1.745E-02␣1.779E-02␣3.070E-02␣3.070E-02
␣1.527E-02␣1.527E-02␣1.277E-02␣1.277E-02␣1.267E-02␣2.246E-02␣2.246E-02
␣1.543E-02␣1.543E-02␣1.119E-02␣1.119E-02␣1.201E-02␣1.729E-02␣1.729E-02
␣1.008E+01␣1.203E-02␣5.429E+00␣1.131E-02␣1.027E-02␣4.722E+00␣7.316E-03
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␣3.284E+00␣1.192E-02␣2.346E+00␣9.777E-03␣8.152E-03␣2.210E+00␣8.358E-03
␣2.438E+00␣1.090E-02␣1.916E+00␣8.598E-03␣8.293E-03␣1.821E+00␣9.347E-03
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␣1.512E+00␣6.193E-03␣1.310E+00␣1.126E-02␣1.206E-02␣1.261E+00␣7.999E-03
␣1.360E+00␣6.975E-03␣1.196E+00␣1.171E-02␣1.179E-02␣1.151E+00␣9.398E-03
␣1.238E+00␣9.349E-03␣1.016E+00␣1.110E-02␣1.160E-02␣9.784E-01␣1.032E-02
␣1.048E+00␣1.072E-02␣8.794E-01␣1.086E-02␣1.266E-02␣8.449E-01␣1.032E-02
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␣3.254E-01␣1.289E-02␣2.651E-01␣1.280E-02␣1.418E-02␣2.533E-01␣1.514E-02
␣2.484E-01␣1.537E-02␣2.021E-01␣1.307E-02␣1.429E-02␣2.077E-01␣1.635E-02
␣2.020E-01␣1.667E-02␣1.587E-01␣1.587E-01␣1.503E-01␣1.731E-01␣1.731E-01
␣1.711E-01␣1.711E-01␣1.299E-01␣1.299E-01␣1.208E-01␣1.398E-01␣1.398E-01
␣1.439E-01␣1.439E-01␣1.090E-01␣1.090E-01␣1.032E-01␣1.075E-01␣1.075E-01
␣1.157E-01␣1.157E-01␣9.067E-02␣9.067E-02␣8.916E-02␣8.197E-02␣8.197E-02
␣8.741E-02␣8.741E-02␣7.201E-02␣7.201E-02␣7.434E-02␣6.566E-02␣6.566E-02

␣6.259E-02␣6.259E-02␣5.357E-02␣5.357E-02␣5.897E-02␣5.659E-02␣5.659E-02
␣4.326E-02␣4.326E-02␣3.251E-02␣3.251E-02␣3.979E-02␣4.896E-02␣4.896E-02
␣2.581E-02␣2.581E-02␣2.259E-02␣2.259E-02␣2.694E-02␣4.091E-02␣4.091E-02
␣1.834E-02␣1.834E-02␣1.745E-02␣1.745E-02␣1.779E-02␣3.070E-02␣3.070E-02
␣1.527E-02␣1.527E-02␣1.277E-02␣1.277E-02␣1.267E-02␣2.246E-02␣2.246E-02
␣1.543E-02␣1.543E-02␣1.119E-02␣1.119E-02␣1.201E-02␣1.729E-02␣1.729E-02
␣1.008E+01␣1.203E-02␣5.429E+00␣1.131E-02␣1.027E-02␣4.722E+00␣7.316E-03
␣5.643E+00␣1.309E-02␣3.165E+00␣1.098E-02␣9.388E-03␣2.926E+00␣6.631E-03
␣3.284E+00␣1.192E-02␣2.346E+00␣9.777E-03␣8.152E-03␣2.210E+00␣8.358E-03
␣2.438E+00␣1.090E-02␣1.916E+00␣8.598E-03␣8.293E-03␣1.821E+00␣9.347E-03
␣1.993E+00␣9.892E-03␣1.645E+00␣8.438E-03␣9.619E-03␣1.574E+00␣8.833E-03
␣1.712E+00␣7.805E-03␣1.456E+00␣9.699E-03␣1.128E-02␣1.397E+00␣7.791E-03
␣1.512E+00␣6.193E-03␣1.310E+00␣1.126E-02␣1.206E-02␣1.261E+00␣7.999E-03
␣1.360E+00␣6.975E-03␣1.196E+00␣1.171E-02␣1.179E-02␣1.151E+00␣9.398E-03
␣1.238E+00␣9.349E-03␣1.016E+00␣1.110E-02␣1.160E-02␣9.784E-01␣1.032E-02
␣1.048E+00␣1.072E-02␣8.794E-01␣1.086E-02␣1.266E-02␣8.449E-01␣1.032E-02
␣9.042E-01␣1.067E-02␣7.695E-01␣1.566E-02␣1.878E-02␣7.376E-01␣1.382E-02
␣7.902E-01␣1.478E-02␣6.789E-01␣1.514E-02␣1.817E-02␣6.492E-01␣1.414E-02
␣6.969E-01␣1.606E-02␣6.028E-01␣1.502E-02␣1.743E-02␣5.747E-01␣1.524E-02
␣6.183E-01␣1.804E-02␣5.386E-01␣1.340E-02␣1.528E-02␣5.107E-01␣1.413E-02
␣5.486E-01␣1.663E-02␣4.315E-01␣1.172E-02␣1.341E-02␣4.029E-01␣1.222E-02
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␣1.711E-01␣1.711E-01␣1.299E-01␣1.299E-01␣1.208E-01␣1.398E-01␣1.398E-01
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␣8.741E-02␣8.741E-02␣7.201E-02␣7.201E-02␣7.434E-02␣6.566E-02␣6.566E-02
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␣4.326E-02␣4.326E-02␣3.251E-02␣3.251E-02␣3.979E-02␣4.896E-02␣4.896E-02
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␣1.834E-02␣1.834E-02␣1.745E-02␣1.745E-02␣1.779E-02␣3.070E-02␣3.070E-02
␣1.527E-02␣1.527E-02␣1.277E-02␣1.277E-02␣1.267E-02␣2.246E-02␣2.246E-02
␣1.543E-02␣1.543E-02␣1.119E-02␣1.119E-02␣1.201E-02␣1.729E-02␣1.729E-02
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␣␣␣␣0

09/27/2010

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␣␣␣␣7␣␣␣␣0␣␣␣␣0␣␣␣␣0
␣1.000E+00Boundary␣Layer
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␣0.500␣1.1276␣0.0547␣0.716␣0.675␣0.8169␣0.0405␣0.699␣0.870␣0.6259␣0.0310␣0.666
␣1.020␣0.5273␣0.0267␣0.683
␣␣␣705.000␣␣␣␣␣␣.000␣␣␣180.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣0
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␣␣␣␣␣␣␣␣␣3␣␣␣␣␣␣␣␣4␣␣␣␣␣␣␣␣␣5␣␣␣␣␣␣␣␣10␣␣␣␣␣␣␣␣20␣␣␣␣␣␣␣␣30␣␣␣␣␣␣␣␣40␣␣␣␣␣␣␣␣50
␣␣␣␣␣␣␣␣60␣␣␣␣␣␣␣␣70␣␣␣␣␣␣␣␣80␣␣␣␣␣␣␣␣90␣␣␣␣␣␣␣100␣␣␣␣␣␣␣110␣␣␣␣␣␣␣120␣␣␣␣␣␣␣130
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␣␣␣␣␣␣0.340␣␣␣␣␣␣0.380␣␣␣␣␣␣0.400␣␣␣␣␣␣0.500␣␣␣␣␣␣0.675␣␣␣␣␣␣0.870␣␣␣␣␣␣1.020
␣8.283E+00␣1.230E-02␣4.670E+00␣1.156E-02␣1.051E-02␣4.071E+00␣7.431E-03
␣4.869E+00␣1.330E-02␣2.867E+00␣1.120E-02␣9.609E-03␣2.643E+00␣6.752E-03
␣2.986E+00␣1.216E-02␣2.186E+00␣9.988E-03␣8.400E-03␣2.050E+00␣8.401E-03
␣2.279E+00␣1.109E-02␣1.819E+00␣8.835E-03␣8.535E-03␣1.719E+00␣9.352E-03
␣1.897E+00␣1.003E-02␣1.582E+00␣8.665E-03␣9.824E-03␣1.503E+00␣8.886E-03
␣1.648E+00␣7.971E-03␣1.411E+00␣9.868E-03␣1.144E-02␣1.347E+00␣7.919E-03
␣1.470E+00␣6.391E-03␣1.280E+00␣1.137E-02␣1.222E-02␣1.224E+00␣8.121E-03
␣1.331E+00␣7.116E-03␣1.173E+00␣1.180E-02␣1.200E-02␣1.123E+00␣9.448E-03
␣1.218E+00␣9.382E-03␣1.006E+00␣1.122E-02␣1.183E-02␣9.624E-01␣1.034E-02
␣1.039E+00␣1.071E-02␣8.760E-01␣1.099E-02␣1.286E-02␣8.361E-01␣1.038E-02
␣9.022E-01␣1.071E-02␣7.700E-01␣1.530E-02␣1.845E-02␣7.332E-01␣1.353E-02
␣7.916E-01␣1.443E-02␣6.815E-01␣1.490E-02␣1.799E-02␣6.476E-01␣1.392E-02
␣7.002E-01␣1.573E-02␣6.065E-01␣1.480E-02␣1.731E-02␣5.749E-01␣1.495E-02
␣6.224E-01␣1.762E-02␣5.424E-01␣1.328E-02␣1.527E-02␣5.118E-01␣1.395E-02
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␣1.557E-02␣1.557E-02␣1.140E-02␣1.140E-02␣1.218E-02␣1.762E-02␣1.762E-02
␣8.283E+00␣1.230E-02␣4.670E+00␣1.156E-02␣1.051E-02␣4.071E+00␣7.431E-03
␣4.869E+00␣1.330E-02␣2.867E+00␣1.120E-02␣9.609E-03␣2.643E+00␣6.752E-03
␣2.986E+00␣1.216E-02␣2.186E+00␣9.988E-03␣8.400E-03␣2.050E+00␣8.401E-03
␣2.279E+00␣1.109E-02␣1.819E+00␣8.835E-03␣8.535E-03␣1.719E+00␣9.352E-03
␣1.897E+00␣1.003E-02␣1.582E+00␣8.665E-03␣9.824E-03␣1.503E+00␣8.886E-03
␣1.648E+00␣7.971E-03␣1.411E+00␣9.868E-03␣1.144E-02␣1.347E+00␣7.919E-03
␣1.470E+00␣6.391E-03␣1.280E+00␣1.137E-02␣1.222E-02␣1.224E+00␣8.121E-03
␣1.331E+00␣7.116E-03␣1.173E+00␣1.180E-02␣1.200E-02␣1.123E+00␣9.448E-03
␣1.218E+00␣9.382E-03␣1.006E+00␣1.122E-02␣1.183E-02␣9.624E-01␣1.034E-02
␣1.039E+00␣1.071E-02␣8.760E-01␣1.099E-02␣1.286E-02␣8.361E-01␣1.038E-02
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␣8.820E-02␣8.820E-02␣7.272E-02␣7.272E-02␣7.533E-02␣6.754E-02␣6.754E-02
␣6.315E-02␣6.315E-02␣5.412E-02␣5.412E-02␣5.976E-02␣5.819E-02␣5.819E-02
␣4.367E-02␣4.367E-02␣3.291E-02␣3.291E-02␣4.033E-02␣5.010E-02␣5.010E-02
␣2.602E-02␣2.602E-02␣2.277E-02␣2.277E-02␣2.726E-02␣4.176E-02␣4.176E-02
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␣1.557E-02␣1.557E-02␣1.140E-02␣1.140E-02␣1.218E-02␣1.762E-02␣1.762E-02
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␣4.869E+00␣1.330E-02␣2.867E+00␣1.120E-02␣9.609E-03␣2.643E+00␣6.752E-03
␣2.986E+00␣1.216E-02␣2.186E+00␣9.988E-03␣8.400E-03␣2.050E+00␣8.401E-03
␣2.279E+00␣1.109E-02␣1.819E+00␣8.835E-03␣8.535E-03␣1.719E+00␣9.352E-03
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␣1.648E+00␣7.971E-03␣1.411E+00␣9.868E-03␣1.144E-02␣1.347E+00␣7.919E-03
␣1.470E+00␣6.391E-03␣1.280E+00␣1.137E-02␣1.222E-02␣1.224E+00␣8.121E-03
␣1.331E+00␣7.116E-03␣1.173E+00␣1.180E-02␣1.200E-02␣1.123E+00␣9.448E-03
␣1.218E+00␣9.382E-03␣1.006E+00␣1.122E-02␣1.183E-02␣9.624E-01␣1.034E-02
␣1.039E+00␣1.071E-02␣8.760E-01␣1.099E-02␣1.286E-02␣8.361E-01␣1.038E-02
␣9.022E-01␣1.071E-02␣7.700E-01␣1.530E-02␣1.845E-02␣7.332E-01␣1.353E-02

␣7.916E-01␣1.443E-02␣6.815E-01␣1.490E-02␣1.799E-02␣6.476E-01␣1.392E-02
␣7.002E-01␣1.573E-02␣6.065E-01␣1.480E-02␣1.731E-02␣5.749E-01␣1.495E-02
␣6.224E-01␣1.762E-02␣5.424E-01␣1.328E-02␣1.527E-02␣5.118E-01␣1.395E-02
␣5.531E-01␣1.631E-02␣4.354E-01␣1.172E-02␣1.352E-02␣4.054E-01␣1.222E-02
␣4.314E-01␣1.341E-02␣3.453E-01␣1.166E-02␣1.335E-02␣3.202E-01␣1.256E-02
␣3.303E-01␣1.287E-02␣2.685E-01␣1.282E-02␣1.432E-02␣2.566E-01␣1.504E-02
␣2.534E-01␣1.525E-02␣2.056E-01␣1.312E-02␣1.447E-02␣2.107E-01␣1.622E-02
␣2.059E-01␣1.652E-02␣1.618E-01␣1.618E-01␣1.534E-01␣1.754E-01␣1.754E-01
␣1.739E-01␣1.739E-01␣1.322E-01␣1.322E-01␣1.235E-01␣1.417E-01␣1.417E-01
␣1.457E-01␣1.457E-01␣1.106E-01␣1.106E-01␣1.051E-01␣1.094E-01␣1.094E-01
␣1.167E-01␣1.167E-01␣9.177E-02␣9.177E-02␣9.052E-02␣8.400E-02␣8.400E-02
␣8.820E-02␣8.820E-02␣7.272E-02␣7.272E-02␣7.533E-02␣6.754E-02␣6.754E-02
␣6.315E-02␣6.315E-02␣5.412E-02␣5.412E-02␣5.976E-02␣5.819E-02␣5.819E-02
␣4.367E-02␣4.367E-02␣3.291E-02␣3.291E-02␣4.033E-02␣5.010E-02␣5.010E-02
␣2.602E-02␣2.602E-02␣2.277E-02␣2.277E-02␣2.726E-02␣4.176E-02␣4.176E-02
␣1.845E-02␣1.845E-02␣1.752E-02␣1.752E-02␣1.802E-02␣3.142E-02␣3.142E-02
␣1.542E-02␣1.542E-02␣1.293E-02␣1.293E-02␣1.290E-02␣2.302E-02␣2.302E-02
␣1.557E-02␣1.557E-02␣1.140E-02␣1.140E-02␣1.218E-02␣1.762E-02␣1.762E-02
␣8.283E+00␣1.230E-02␣4.670E+00␣1.156E-02␣1.051E-02␣4.071E+00␣7.431E-03
␣4.869E+00␣1.330E-02␣2.867E+00␣1.120E-02␣9.609E-03␣2.643E+00␣6.752E-03
␣2.986E+00␣1.216E-02␣2.186E+00␣9.988E-03␣8.400E-03␣2.050E+00␣8.401E-03
␣2.279E+00␣1.109E-02␣1.819E+00␣8.835E-03␣8.535E-03␣1.719E+00␣9.352E-03
␣1.897E+00␣1.003E-02␣1.582E+00␣8.665E-03␣9.824E-03␣1.503E+00␣8.886E-03
␣1.648E+00␣7.971E-03␣1.411E+00␣9.868E-03␣1.144E-02␣1.347E+00␣7.919E-03
␣1.470E+00␣6.391E-03␣1.280E+00␣1.137E-02␣1.222E-02␣1.224E+00␣8.121E-03
␣1.331E+00␣7.116E-03␣1.173E+00␣1.180E-02␣1.200E-02␣1.123E+00␣9.448E-03
␣1.218E+00␣9.382E-03␣1.006E+00␣1.122E-02␣1.183E-02␣9.624E-01␣1.034E-02
␣1.039E+00␣1.071E-02␣8.760E-01␣1.099E-02␣1.286E-02␣8.361E-01␣1.038E-02
␣9.022E-01␣1.071E-02␣7.700E-01␣1.530E-02␣1.845E-02␣7.332E-01␣1.353E-02
␣7.916E-01␣1.443E-02␣6.815E-01␣1.490E-02␣1.799E-02␣6.476E-01␣1.392E-02
␣7.002E-01␣1.573E-02␣6.065E-01␣1.480E-02␣1.731E-02␣5.749E-01␣1.495E-02
␣6.224E-01␣1.762E-02␣5.424E-01␣1.328E-02␣1.527E-02␣5.118E-01␣1.395E-02
␣5.531E-01␣1.631E-02␣4.354E-01␣1.172E-02␣1.352E-02␣4.054E-01␣1.222E-02
␣4.314E-01␣1.341E-02␣3.453E-01␣1.166E-02␣1.335E-02␣3.202E-01␣1.256E-02
␣3.303E-01␣1.287E-02␣2.685E-01␣1.282E-02␣1.432E-02␣2.566E-01␣1.504E-02
␣2.534E-01␣1.525E-02␣2.056E-01␣1.312E-02␣1.447E-02␣2.107E-01␣1.622E-02
␣2.059E-01␣1.652E-02␣1.618E-01␣1.618E-01␣1.534E-01␣1.754E-01␣1.754E-01
␣1.739E-01␣1.739E-01␣1.322E-01␣1.322E-01␣1.235E-01␣1.417E-01␣1.417E-01
␣1.457E-01␣1.457E-01␣1.106E-01␣1.106E-01␣1.051E-01␣1.094E-01␣1.094E-01
␣1.167E-01␣1.167E-01␣9.177E-02␣9.177E-02␣9.052E-02␣8.400E-02␣8.400E-02
␣8.820E-02␣8.820E-02␣7.272E-02␣7.272E-02␣7.533E-02␣6.754E-02␣6.754E-02
␣6.315E-02␣6.315E-02␣5.412E-02␣5.412E-02␣5.976E-02␣5.819E-02␣5.819E-02

␣4.367E-02␣4.367E-02␣3.291E-02␣3.291E-02␣4.033E-02␣5.010E-02␣5.010E-02
␣2.602E-02␣2.602E-02␣2.277E-02␣2.277E-02␣2.726E-02␣4.176E-02␣4.176E-02
␣1.845E-02␣1.845E-02␣1.752E-02␣1.752E-02␣1.802E-02␣3.142E-02␣3.142E-02
␣1.542E-02␣1.542E-02␣1.293E-02␣1.293E-02␣1.290E-02␣2.302E-02␣2.302E-02
␣1.557E-02␣1.557E-02␣1.140E-02␣1.140E-02␣1.218E-02␣1.762E-02␣1.762E-02
␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣1.1␣␣␣␣␣␣0.005␣␣␣␣␣␣␣0.01RM␣27sep10MGA␣␣␣T
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08/29/2011

C␣␣␣2␣␣␣␣3␣␣␣␣2␣␣␣-1␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣306.25␣␣␣␣␣-5
FFF␣0␣␣␣␣0␣390.00000␣␣␣␣g␣1.06␣␣␣a␣0.24␣01␣F␣T␣F␣F
DATA/Filter/ASTER_vnir.flt
␣␣␣␣7␣␣␣␣0USS␣0␣␣␣10␣␣␣␣0␣␣␣␣0␣␣␣␣␣␣␣␣73.60289␣␣0.0␣␣␣␣␣␣␣␣0.0␣␣␣␣␣␣␣.000␣␣␣␣␣1.434
␣␣␣␣7␣␣␣␣0␣␣␣␣0␣␣␣␣0
␣1.000E+00Boundary␣Layer
␣0.340␣1.7218␣0.0677␣0.725␣0.360␣1.5228␣0.0608␣0.717␣0.400␣1.4343␣0.0565␣0.707
␣0.500␣1.1625␣0.0463␣0.697␣0.675␣0.7580␣0.0326␣0.670␣0.870␣0.5341␣0.0240␣0.624
␣1.020␣0.4230␣0.0203␣0.640
␣␣␣705.000␣␣␣␣␣␣.000␣␣␣180.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣0
␣␣␣12␣␣␣␣1␣␣241␣␣␣␣0
-145.48930␣␣33.00622␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000
␣␣␣29␣␣␣␣7
␣␣␣␣␣␣␣0.0␣␣␣␣␣␣␣0.2␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣0.6␣␣␣␣␣␣␣0.8␣␣␣␣␣␣␣1.0␣␣␣␣␣␣␣1.5␣␣␣␣␣␣␣␣␣2
␣␣␣␣␣␣␣␣␣3␣␣␣␣␣␣␣␣4␣␣␣␣␣␣␣␣␣5␣␣␣␣␣␣␣␣10␣␣␣␣␣␣␣␣20␣␣␣␣␣␣␣␣30␣␣␣␣␣␣␣␣40␣␣␣␣␣␣␣␣50
␣␣␣␣␣␣␣␣60␣␣␣␣␣␣␣␣70␣␣␣␣␣␣␣␣80␣␣␣␣␣␣␣␣90␣␣␣␣␣␣␣100␣␣␣␣␣␣␣110␣␣␣␣␣␣␣120␣␣␣␣␣␣␣130
␣␣␣␣␣␣␣140␣␣␣␣␣␣␣150␣␣␣␣␣␣␣160␣␣␣␣␣␣␣170␣␣␣␣␣␣␣180
␣␣␣␣␣␣0.340␣␣␣␣␣␣0.380␣␣␣␣␣␣0.400␣␣␣␣␣␣0.500␣␣␣␣␣␣0.675␣␣␣␣␣␣0.870␣␣␣␣␣␣1.020
␣3.239E+00␣1.362E-02␣2.315E+00␣1.283E-02␣1.167E-02␣2.026E+00␣8.089E-03
␣2.453E+00␣1.430E-02␣1.810E+00␣1.230E-02␣1.077E-02␣1.629E+00␣7.393E-03
␣1.914E+00␣1.328E-02␣1.565E+00␣1.109E-02␣9.722E-03␣1.423E+00␣8.595E-03
␣1.654E+00␣1.197E-02␣1.409E+00␣1.008E-02␣9.832E-03␣1.288E+00␣9.338E-03
␣1.486E+00␣1.075E-02␣1.294E+00␣9.859E-03␣1.087E-02␣1.186E+00␣9.115E-03
␣1.364E+00␣8.870E-03␣1.203E+00␣1.071E-02␣1.222E-02␣1.105E+00␣8.535E-03
␣1.265E+00␣7.470E-03␣1.125E+00␣1.182E-02␣1.298E-02␣1.035E+00␣8.731E-03
␣1.181E+00␣7.879E-03␣1.058E+00␣1.218E-02␣1.297E-02␣9.733E-01␣9.713E-03
␣1.107E+00␣9.538E-03␣9.422E-01␣1.176E-02␣1.295E-02␣8.661E-01␣1.047E-02
␣9.817E-01␣1.064E-02␣8.434E-01␣1.153E-02␣1.374E-02␣7.746E-01␣1.068E-02
␣8.756E-01␣1.078E-02␣7.571E-01␣1.392E-02␣1.715E-02␣6.948E-01␣1.247E-02
␣7.838E-01␣1.299E-02␣6.808E-01␣1.387E-02␣1.718E-02␣6.247E-01␣1.304E-02
␣7.035E-01␣1.420E-02␣6.133E-01␣1.382E-02␣1.677E-02␣5.627E-01␣1.384E-02
␣6.319E-01␣1.558E-02␣5.530E-01␣1.282E-02␣1.540E-02␣5.071E-01␣1.334E-02
␣5.666E-01␣1.478E-02␣4.487E-01␣1.187E-02␣1.427E-02␣4.108E-01␣1.243E-02

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␣6.560E-02␣6.560E-02␣5.655E-02␣5.655E-02␣6.334E-02␣6.678E-02␣6.678E-02
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␣2.725E-02␣2.725E-02␣2.367E-02␣2.367E-02␣2.880E-02␣4.594E-02␣4.594E-02
␣1.920E-02␣1.920E-02␣1.792E-02␣1.792E-02␣1.926E-02␣3.491E-02␣3.491E-02
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␣1.628E-02␣1.628E-02␣1.247E-02␣1.247E-02␣1.310E-02␣1.929E-02␣1.929E-02
␣3.239E+00␣1.362E-02␣2.315E+00␣1.283E-02␣1.167E-02␣2.026E+00␣8.089E-03
␣2.453E+00␣1.430E-02␣1.810E+00␣1.230E-02␣1.077E-02␣1.629E+00␣7.393E-03
␣1.914E+00␣1.328E-02␣1.565E+00␣1.109E-02␣9.722E-03␣1.423E+00␣8.595E-03
␣1.654E+00␣1.197E-02␣1.409E+00␣1.008E-02␣9.832E-03␣1.288E+00␣9.338E-03
␣1.486E+00␣1.075E-02␣1.294E+00␣9.859E-03␣1.087E-02␣1.186E+00␣9.115E-03
␣1.364E+00␣8.870E-03␣1.203E+00␣1.071E-02␣1.222E-02␣1.105E+00␣8.535E-03
␣1.265E+00␣7.470E-03␣1.125E+00␣1.182E-02␣1.298E-02␣1.035E+00␣8.731E-03
␣1.181E+00␣7.879E-03␣1.058E+00␣1.218E-02␣1.297E-02␣9.733E-01␣9.713E-03
␣1.107E+00␣9.538E-03␣9.422E-01␣1.176E-02␣1.295E-02␣8.661E-01␣1.047E-02
␣9.817E-01␣1.064E-02␣8.434E-01␣1.153E-02␣1.374E-02␣7.746E-01␣1.068E-02
␣8.756E-01␣1.078E-02␣7.571E-01␣1.392E-02␣1.715E-02␣6.948E-01␣1.247E-02
␣7.838E-01␣1.299E-02␣6.808E-01␣1.387E-02␣1.718E-02␣6.247E-01␣1.304E-02
␣7.035E-01␣1.420E-02␣6.133E-01␣1.382E-02␣1.677E-02␣5.627E-01␣1.384E-02
␣6.319E-01␣1.558E-02␣5.530E-01␣1.282E-02␣1.540E-02␣5.071E-01␣1.334E-02
␣5.666E-01␣1.478E-02␣4.487E-01␣1.187E-02␣1.427E-02␣4.108E-01␣1.243E-02
␣4.501E-01␣1.294E-02␣3.599E-01␣1.202E-02␣1.431E-02␣3.319E-01␣1.291E-02
␣3.520E-01␣1.280E-02␣2.843E-01␣1.302E-02␣1.514E-02␣2.705E-01␣1.475E-02
␣2.760E-01␣1.466E-02␣2.225E-01␣1.338E-02␣1.538E-02␣2.237E-01␣1.564E-02
␣2.241E-01␣1.568E-02␣1.769E-01␣1.769E-01␣1.691E-01␣1.858E-01␣1.858E-01
␣1.862E-01␣1.862E-01␣1.441E-01␣1.441E-01␣1.366E-01␣1.512E-01␣1.512E-01
␣1.532E-01␣1.532E-01␣1.187E-01␣1.187E-01␣1.147E-01␣1.197E-01␣1.197E-01
␣1.213E-01␣1.213E-01␣9.671E-02␣9.671E-02␣9.699E-02␣9.481E-02␣9.481E-02
␣9.137E-02␣9.137E-02␣7.584E-02␣7.584E-02␣7.991E-02␣7.770E-02␣7.770E-02
␣6.560E-02␣6.560E-02␣5.655E-02␣5.655E-02␣6.334E-02␣6.678E-02␣6.678E-02
␣4.563E-02␣4.563E-02␣3.487E-02␣3.487E-02␣4.285E-02␣5.602E-02␣5.602E-02
␣2.725E-02␣2.725E-02␣2.367E-02␣2.367E-02␣2.880E-02␣4.594E-02␣4.594E-02
␣1.920E-02␣1.920E-02␣1.792E-02␣1.792E-02␣1.926E-02␣3.491E-02␣3.491E-02
␣1.629E-02␣1.629E-02␣1.379E-02␣1.379E-02␣1.411E-02␣2.572E-02␣2.572E-02

␣1.628E-02␣1.628E-02␣1.247E-02␣1.247E-02␣1.310E-02␣1.929E-02␣1.929E-02
␣3.239E+00␣1.362E-02␣2.315E+00␣1.283E-02␣1.167E-02␣2.026E+00␣8.089E-03
␣2.453E+00␣1.430E-02␣1.810E+00␣1.230E-02␣1.077E-02␣1.629E+00␣7.393E-03
␣1.914E+00␣1.328E-02␣1.565E+00␣1.109E-02␣9.722E-03␣1.423E+00␣8.595E-03
␣1.654E+00␣1.197E-02␣1.409E+00␣1.008E-02␣9.832E-03␣1.288E+00␣9.338E-03
␣1.486E+00␣1.075E-02␣1.294E+00␣9.859E-03␣1.087E-02␣1.186E+00␣9.115E-03
␣1.364E+00␣8.870E-03␣1.203E+00␣1.071E-02␣1.222E-02␣1.105E+00␣8.535E-03
␣1.265E+00␣7.470E-03␣1.125E+00␣1.182E-02␣1.298E-02␣1.035E+00␣8.731E-03
␣1.181E+00␣7.879E-03␣1.058E+00␣1.218E-02␣1.297E-02␣9.733E-01␣9.713E-03
␣1.107E+00␣9.538E-03␣9.422E-01␣1.176E-02␣1.295E-02␣8.661E-01␣1.047E-02
␣9.817E-01␣1.064E-02␣8.434E-01␣1.153E-02␣1.374E-02␣7.746E-01␣1.068E-02
␣8.756E-01␣1.078E-02␣7.571E-01␣1.392E-02␣1.715E-02␣6.948E-01␣1.247E-02
␣7.838E-01␣1.299E-02␣6.808E-01␣1.387E-02␣1.718E-02␣6.247E-01␣1.304E-02
␣7.035E-01␣1.420E-02␣6.133E-01␣1.382E-02␣1.677E-02␣5.627E-01␣1.384E-02
␣6.319E-01␣1.558E-02␣5.530E-01␣1.282E-02␣1.540E-02␣5.071E-01␣1.334E-02
␣5.666E-01␣1.478E-02␣4.487E-01␣1.187E-02␣1.427E-02␣4.108E-01␣1.243E-02
␣4.501E-01␣1.294E-02␣3.599E-01␣1.202E-02␣1.431E-02␣3.319E-01␣1.291E-02
␣3.520E-01␣1.280E-02␣2.843E-01␣1.302E-02␣1.514E-02␣2.705E-01␣1.475E-02
␣2.760E-01␣1.466E-02␣2.225E-01␣1.338E-02␣1.538E-02␣2.237E-01␣1.564E-02
␣2.241E-01␣1.568E-02␣1.769E-01␣1.769E-01␣1.691E-01␣1.858E-01␣1.858E-01
␣1.862E-01␣1.862E-01␣1.441E-01␣1.441E-01␣1.366E-01␣1.512E-01␣1.512E-01
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␣4.563E-02␣4.563E-02␣3.487E-02␣3.487E-02␣4.285E-02␣5.602E-02␣5.602E-02
␣2.725E-02␣2.725E-02␣2.367E-02␣2.367E-02␣2.880E-02␣4.594E-02␣4.594E-02
␣1.920E-02␣1.920E-02␣1.792E-02␣1.792E-02␣1.926E-02␣3.491E-02␣3.491E-02
␣1.629E-02␣1.629E-02␣1.379E-02␣1.379E-02␣1.411E-02␣2.572E-02␣2.572E-02
␣1.628E-02␣1.628E-02␣1.247E-02␣1.247E-02␣1.310E-02␣1.929E-02␣1.929E-02
␣3.239E+00␣1.362E-02␣2.315E+00␣1.283E-02␣1.167E-02␣2.026E+00␣8.089E-03
␣2.453E+00␣1.430E-02␣1.810E+00␣1.230E-02␣1.077E-02␣1.629E+00␣7.393E-03
␣1.914E+00␣1.328E-02␣1.565E+00␣1.109E-02␣9.722E-03␣1.423E+00␣8.595E-03
␣1.654E+00␣1.197E-02␣1.409E+00␣1.008E-02␣9.832E-03␣1.288E+00␣9.338E-03
␣1.486E+00␣1.075E-02␣1.294E+00␣9.859E-03␣1.087E-02␣1.186E+00␣9.115E-03
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␣1.265E+00␣7.470E-03␣1.125E+00␣1.182E-02␣1.298E-02␣1.035E+00␣8.731E-03
␣1.181E+00␣7.879E-03␣1.058E+00␣1.218E-02␣1.297E-02␣9.733E-01␣9.713E-03
␣1.107E+00␣9.538E-03␣9.422E-01␣1.176E-02␣1.295E-02␣8.661E-01␣1.047E-02
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␣8.756E-01␣1.078E-02␣7.571E-01␣1.392E-02␣1.715E-02␣6.948E-01␣1.247E-02
␣7.838E-01␣1.299E-02␣6.808E-01␣1.387E-02␣1.718E-02␣6.247E-01␣1.304E-02

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␣3.520E-01␣1.280E-02␣2.843E-01␣1.302E-02␣1.514E-02␣2.705E-01␣1.475E-02
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␣1.862E-01␣1.862E-01␣1.441E-01␣1.441E-01␣1.366E-01␣1.512E-01␣1.512E-01
␣1.532E-01␣1.532E-01␣1.187E-01␣1.187E-01␣1.147E-01␣1.197E-01␣1.197E-01
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␣9.137E-02␣9.137E-02␣7.584E-02␣7.584E-02␣7.991E-02␣7.770E-02␣7.770E-02
␣6.560E-02␣6.560E-02␣5.655E-02␣5.655E-02␣6.334E-02␣6.678E-02␣6.678E-02
␣4.563E-02␣4.563E-02␣3.487E-02␣3.487E-02␣4.285E-02␣5.602E-02␣5.602E-02
␣2.725E-02␣2.725E-02␣2.367E-02␣2.367E-02␣2.880E-02␣4.594E-02␣4.594E-02
␣1.920E-02␣1.920E-02␣1.792E-02␣1.792E-02␣1.926E-02␣3.491E-02␣3.491E-02
␣1.629E-02␣1.629E-02␣1.379E-02␣1.379E-02␣1.411E-02␣2.572E-02␣2.572E-02
␣1.628E-02␣1.628E-02␣1.247E-02␣1.247E-02␣1.310E-02␣1.929E-02␣1.929E-02
␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣1.1␣␣␣␣␣0.005␣␣␣␣␣␣0.01RM␣29aug11MGA␣␣␣T
␣␣␣␣0

09/16/2012

C␣␣␣2␣␣␣␣3␣␣␣␣2␣␣␣-1␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣␣␣0␣␣306.25␣␣␣␣-6
FFF␣0␣␣␣␣0␣390.00000␣␣␣␣g␣0.32␣␣␣a␣0.22␣01␣F␣T␣F␣F
DATA/Filter/ASTER_vnir.flt
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␣␣␣␣7␣␣␣␣0␣␣␣␣0␣␣␣␣0
␣1.000E+00Boundary␣Layer
␣0.340␣1.4246␣0.0843␣0.741␣0.360␣1.3068␣0.0768␣0.737␣0.400␣1.2638␣0.0728␣0.731
␣0.500␣1.1108␣0.0619␣0.725␣0.675␣0.8460␣0.0470␣0.711␣0.870␣0.6743␣0.0367␣0.685
␣1.020␣0.5847␣0.0319␣0.700
␣␣␣705.000␣␣␣␣␣␣.000␣␣␣180.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣0
␣␣␣12␣␣␣␣1␣␣260␣␣␣␣0
-152.97553␣␣38.80353␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000␣␣␣␣␣␣.000
␣␣␣29␣␣␣␣7
␣␣␣␣␣␣␣0.0␣␣␣␣␣␣␣0.2␣␣␣␣␣␣␣0.4␣␣␣␣␣␣␣0.6␣␣␣␣␣␣␣0.8␣␣␣␣␣␣␣1.0␣␣␣␣␣␣␣1.5␣␣␣␣␣␣␣␣␣2
␣␣␣␣␣␣␣␣␣3␣␣␣␣␣␣␣␣4␣␣␣␣␣␣␣␣␣5␣␣␣␣␣␣␣␣10␣␣␣␣␣␣␣␣20␣␣␣␣␣␣␣␣30␣␣␣␣␣␣␣␣40␣␣␣␣␣␣␣␣50
␣␣␣␣␣␣␣␣60␣␣␣␣␣␣␣␣70␣␣␣␣␣␣␣␣80␣␣␣␣␣␣␣␣90␣␣␣␣␣␣␣100␣␣␣␣␣␣␣␣110␣␣␣␣␣␣␣␣120␣␣␣␣␣␣␣␣130
␣␣␣␣␣␣␣␣140␣␣␣␣␣␣␣␣150␣␣␣␣␣␣␣␣160␣␣␣␣␣␣␣␣170␣␣␣␣␣␣␣␣180
␣␣␣␣␣␣0.340␣␣␣␣␣␣0.380␣␣␣␣␣␣0.400␣␣␣␣␣␣0.500␣␣␣␣␣␣0.675␣␣␣␣␣␣0.870␣␣␣␣␣␣1.020
␣1.367E+01␣1.162E-02␣6.876E+00␣1.090E-02␣9.907E-03␣5.953E+00␣7.142E-03
␣7.114E+00␣1.275E-02␣3.696E+00␣1.063E-02␣9.045E-03␣3.430E+00␣6.443E-03
␣3.816E+00␣1.154E-02␣2.620E+00␣9.446E-03␣7.775E-03␣2.482E+00␣8.280E-03

␣2.710E+00␣1.060E-02␣2.079E+00␣8.231E-03␣7.920E-03␣1.990E+00␣9.326E-03
␣2.152E+00␣9.666E-03␣1.750E+00␣8.082E-03␣9.302E-03␣1.687E+00␣8.736E-03
␣1.812E+00␣7.549E-03␣1.524E+00␣9.432E-03␣1.102E-02␣1.477E+00␣7.583E-03
␣1.578E+00␣5.892E-03␣1.357E+00␣1.109E-02␣1.179E-02␣1.319E+00␣7.804E-03
␣1.403E+00␣6.757E-03␣1.227E+00␣1.155E-02␣1.145E-02␣1.193E+00␣9.313E-03
␣1.266E+00␣9.286E-03␣1.028E+00␣1.090E-02␣1.121E-02␣1.001E+00␣1.028E-02
␣1.058E+00␣1.070E-02␣8.821E-01␣1.066E-02␣1.236E-02␣8.559E-01␣1.022E-02
␣9.049E-01␣1.060E-02␣7.666E-01␣1.622E-02␣1.930E-02␣7.420E-01␣1.432E-02
␣7.857E-01␣1.532E-02␣6.730E-01␣1.551E-02␣1.845E-02␣6.496E-01␣1.451E-02
␣6.899E-01␣1.654E-02␣5.955E-01␣1.537E-02␣1.763E-02␣5.728E-01␣1.568E-02
␣6.105E-01␣1.865E-02␣5.311E-01␣1.359E-02␣1.528E-02␣5.074E-01␣1.442E-02
␣5.403E-01␣1.711E-02␣4.247E-01␣1.173E-02␣1.324E-02␣3.980E-01␣1.225E-02
␣4.183E-01␣1.367E-02␣3.354E-01␣1.155E-02␣1.296E-02␣3.114E-01␣1.249E-02
␣3.172E-01␣1.292E-02␣2.593E-01␣1.276E-02␣1.396E-02␣2.477E-01␣1.528E-02
␣2.405E-01␣1.554E-02␣1.964E-01␣1.298E-02␣1.401E-02␣2.029E-01␣1.655E-02
␣1.957E-01␣1.687E-02␣1.538E-01␣1.538E-01␣1.454E-01␣1.695E-01␣1.695E-01
␣1.668E-01␣1.668E-01␣1.260E-01␣1.260E-01␣1.168E-01␣1.368E-01␣1.368E-01
␣1.410E-01␣1.410E-01␣1.062E-01␣1.062E-01␣1.002E-01␣1.045E-01␣1.045E-01
␣1.137E-01␣1.137E-01␣8.888E-02␣8.888E-02␣8.700E-02␣7.891E-02␣7.891E-02
␣8.607E-02␣8.607E-02␣7.083E-02␣7.083E-02␣7.271E-02␣6.282E-02␣6.282E-02
␣6.164E-02␣6.164E-02␣5.268E-02␣5.268E-02␣5.767E-02␣5.418E-02␣5.418E-02
␣4.261E-02␣4.261E-02␣3.186E-02␣3.186E-02␣3.889E-02␣4.722E-02␣4.722E-02
␣2.548E-02␣2.548E-02␣2.231E-02␣2.231E-02␣2.640E-02␣3.959E-02␣3.959E-02
␣1.816E-02␣1.816E-02␣1.732E-02␣1.732E-02␣1.742E-02␣2.958E-02␣2.958E-02
␣1.501E-02␣1.501E-02␣1.252E-02␣1.252E-02␣1.233E-02␣2.160E-02␣2.160E-02
␣1.517E-02␣1.517E-02␣1.087E-02␣1.087E-02␣1.174E-02␣1.676E-02␣1.676E-02
␣1.367E+01␣1.162E-02␣6.876E+00␣1.090E-02␣9.907E-03␣5.953E+00␣7.142E-03
␣7.114E+00␣1.275E-02␣3.696E+00␣1.063E-02␣9.045E-03␣3.430E+00␣6.443E-03
␣3.816E+00␣1.154E-02␣2.620E+00␣9.446E-03␣7.775E-03␣2.482E+00␣8.280E-03
␣2.710E+00␣1.060E-02␣2.079E+00␣8.231E-03␣7.920E-03␣1.990E+00␣9.326E-03
␣2.152E+00␣9.666E-03␣1.750E+00␣8.082E-03␣9.302E-03␣1.687E+00␣8.736E-03
␣1.812E+00␣7.549E-03␣1.524E+00␣9.432E-03␣1.102E-02␣1.477E+00␣7.583E-03
␣1.578E+00␣5.892E-03␣1.357E+00␣1.109E-02␣1.179E-02␣1.319E+00␣7.804E-03
␣1.403E+00␣6.757E-03␣1.227E+00␣1.155E-02␣1.145E-02␣1.193E+00␣9.313E-03
␣1.266E+00␣9.286E-03␣1.028E+00␣1.090E-02␣1.121E-02␣1.001E+00␣1.028E-02
␣1.058E+00␣1.070E-02␣8.821E-01␣1.066E-02␣1.236E-02␣8.559E-01␣1.022E-02
␣9.049E-01␣1.060E-02␣7.666E-01␣1.622E-02␣1.930E-02␣7.420E-01␣1.432E-02
␣7.857E-01␣1.532E-02␣6.730E-01␣1.551E-02␣1.845E-02␣6.496E-01␣1.451E-02
␣6.899E-01␣1.654E-02␣5.955E-01␣1.537E-02␣1.763E-02␣5.728E-01␣1.568E-02
␣6.105E-01␣1.865E-02␣5.311E-01␣1.359E-02␣1.528E-02␣5.074E-01␣1.442E-02
␣5.403E-01␣1.711E-02␣4.247E-01␣1.173E-02␣1.324E-02␣3.980E-01␣1.225E-02
␣4.183E-01␣1.367E-02␣3.354E-01␣1.155E-02␣1.296E-02␣3.114E-01␣1.249E-02

␣3.172E-01␣1.292E-02␣2.593E-01␣1.276E-02␣1.396E-02␣2.477E-01␣1.528E-02
␣2.405E-01␣1.554E-02␣1.964E-01␣1.298E-02␣1.401E-02␣2.029E-01␣1.655E-02
␣1.957E-01␣1.687E-02␣1.538E-01␣1.538E-01␣1.454E-01␣1.695E-01␣1.695E-01
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␣1.137E-01␣1.137E-01␣8.888E-02␣8.888E-02␣8.700E-02␣7.891E-02␣7.891E-02
␣8.607E-02␣8.607E-02␣7.083E-02␣7.083E-02␣7.271E-02␣6.282E-02␣6.282E-02
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␣1.517E-02␣1.517E-02␣1.087E-02␣1.087E-02␣1.174E-02␣1.676E-02␣1.676E-02
␣1.367E+01␣1.162E-02␣6.876E+00␣1.090E-02␣9.907E-03␣5.953E+00␣7.142E-03
␣7.114E+00␣1.275E-02␣3.696E+00␣1.063E-02␣9.045E-03␣3.430E+00␣6.443E-03
␣3.816E+00␣1.154E-02␣2.620E+00␣9.446E-03␣7.775E-03␣2.482E+00␣8.280E-03
␣2.710E+00␣1.060E-02␣2.079E+00␣8.231E-03␣7.920E-03␣1.990E+00␣9.326E-03
␣2.152E+00␣9.666E-03␣1.750E+00␣8.082E-03␣9.302E-03␣1.687E+00␣8.736E-03
␣1.812E+00␣7.549E-03␣1.524E+00␣9.432E-03␣1.102E-02␣1.477E+00␣7.583E-03
␣1.578E+00␣5.892E-03␣1.357E+00␣1.109E-02␣1.179E-02␣1.319E+00␣7.804E-03
␣1.403E+00␣6.757E-03␣1.227E+00␣1.155E-02␣1.145E-02␣1.193E+00␣9.313E-03
␣1.266E+00␣9.286E-03␣1.028E+00␣1.090E-02␣1.121E-02␣1.001E+00␣1.028E-02
␣1.058E+00␣1.070E-02␣8.821E-01␣1.066E-02␣1.236E-02␣8.559E-01␣1.022E-02
␣9.049E-01␣1.060E-02␣7.666E-01␣1.622E-02␣1.930E-02␣7.420E-01␣1.432E-02
␣7.857E-01␣1.532E-02␣6.730E-01␣1.551E-02␣1.845E-02␣6.496E-01␣1.451E-02
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␣4.183E-01␣1.367E-02␣3.354E-01␣1.155E-02␣1.296E-02␣3.114E-01␣1.249E-02
␣3.172E-01␣1.292E-02␣2.593E-01␣1.276E-02␣1.396E-02␣2.477E-01␣1.528E-02
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␣8.607E-02␣8.607E-02␣7.083E-02␣7.083E-02␣7.271E-02␣6.282E-02␣6.282E-02
␣6.164E-02␣6.164E-02␣5.268E-02␣5.268E-02␣5.767E-02␣5.418E-02␣5.418E-02
␣4.261E-02␣4.261E-02␣3.186E-02␣3.186E-02␣3.889E-02␣4.722E-02␣4.722E-02
␣2.548E-02␣2.548E-02␣2.231E-02␣2.231E-02␣2.640E-02␣3.959E-02␣3.959E-02
␣1.816E-02␣1.816E-02␣1.732E-02␣1.732E-02␣1.742E-02␣2.958E-02␣2.958E-02
␣1.501E-02␣1.501E-02␣1.252E-02␣1.252E-02␣1.233E-02␣2.160E-02␣2.160E-02
␣1.517E-02␣1.517E-02␣1.087E-02␣1.087E-02␣1.174E-02␣1.676E-02␣1.676E-02

␣1.367E+01␣1.162E-02␣6.876E+00␣1.090E-02␣9.907E-03␣5.953E+00␣7.142E-03
␣7.114E+00␣1.275E-02␣3.696E+00␣1.063E-02␣9.045E-03␣3.430E+00␣6.443E-03
␣3.816E+00␣1.154E-02␣2.620E+00␣9.446E-03␣7.775E-03␣2.482E+00␣8.280E-03
␣2.710E+00␣1.060E-02␣2.079E+00␣8.231E-03␣7.920E-03␣1.990E+00␣9.326E-03
␣2.152E+00␣9.666E-03␣1.750E+00␣8.082E-03␣9.302E-03␣1.687E+00␣8.736E-03
␣1.812E+00␣7.549E-03␣1.524E+00␣9.432E-03␣1.102E-02␣1.477E+00␣7.583E-03
␣1.578E+00␣5.892E-03␣1.357E+00␣1.109E-02␣1.179E-02␣1.319E+00␣7.804E-03
␣1.403E+00␣6.757E-03␣1.227E+00␣1.155E-02␣1.145E-02␣1.193E+00␣9.313E-03
␣1.266E+00␣9.286E-03␣1.028E+00␣1.090E-02␣1.121E-02␣1.001E+00␣1.028E-02
␣1.058E+00␣1.070E-02␣8.821E-01␣1.066E-02␣1.236E-02␣8.559E-01␣1.022E-02
␣9.049E-01␣1.060E-02␣7.666E-01␣1.622E-02␣1.930E-02␣7.420E-01␣1.432E-02
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␣6.899E-01␣1.654E-02␣5.955E-01␣1.537E-02␣1.763E-02␣5.728E-01␣1.568E-02
␣6.105E-01␣1.865E-02␣5.311E-01␣1.359E-02␣1.528E-02␣5.074E-01␣1.442E-02
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␣8.607E-02␣8.607E-02␣7.083E-02␣7.083E-02␣7.271E-02␣6.282E-02␣6.282E-02
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␣1.517E-02␣1.517E-02␣1.087E-02␣1.087E-02␣1.174E-02␣1.676E-02␣1.676E-02
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␣␣␣␣0