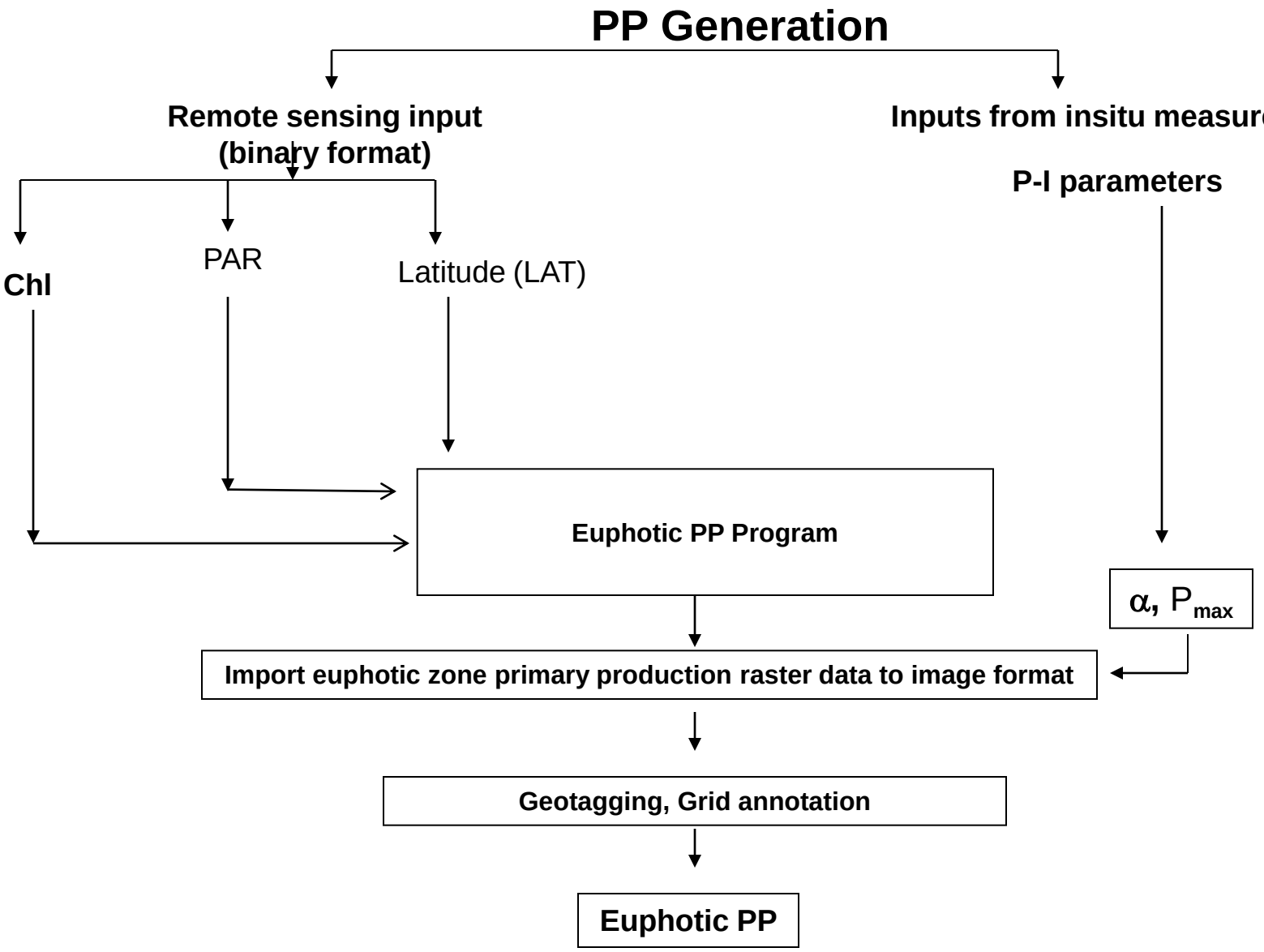
Estimating Ocean Primary Production from Ocean Color


PP Generation
Remote sensing input (binary format)
Inputs from insitu measurements
P-I parameters
Chl
PAR
Latitude (LAT)
Euphotic PP Program
α, P max
Import euphotic zone primary production raster data to image format
Geotagging, Grid annotation
Euphotic PP

Inputs For Euphotic Zone Primary (EuPP) Production

Remote Sensing Inputs (geocorrected)

1. Chlorophyll a concentration (Chl)
2. Daily averaged (24 hours) Photosynthetically available radiation (PAR).
3. Latitude

Non-remote Sensing Inputs

1. P-I parameters

Steps for EuPP generation

Step 1: Load and display the geo-corrected chl-a, daily averaged PAR and latitude image
Reading image geo-location information from any one file

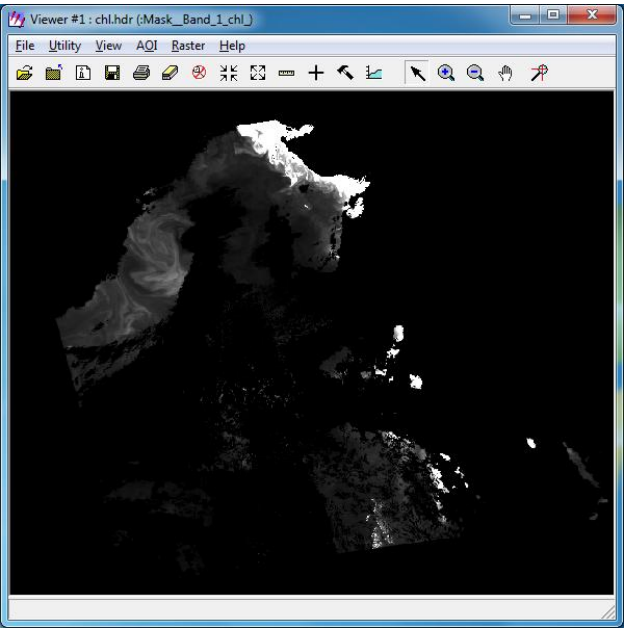
Step 2:Exporting all image files to raster format (generic binary)in ERDAS, to be used as inputs in PP Program.

Step 3:Execution of Euphotic PP Program to generate PP files

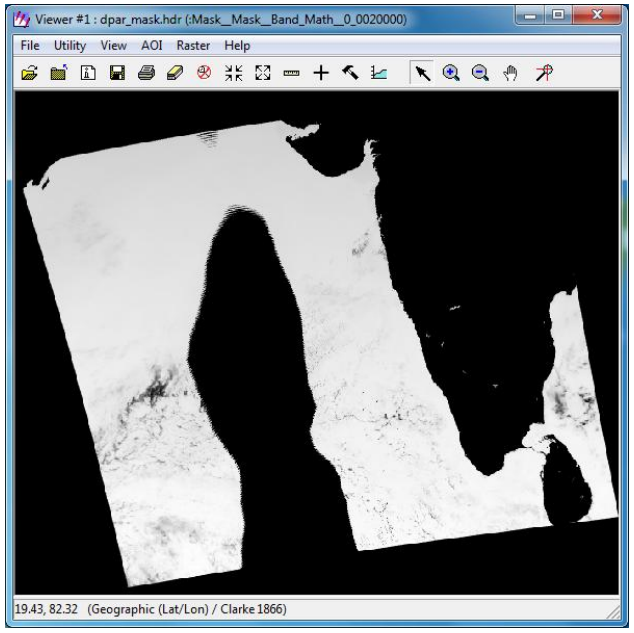
Step 4:Importing Euphotic PP into Image format in ERDAS.

Step 5:Geotagging of Euphotic PP using ERDAS image info utility.

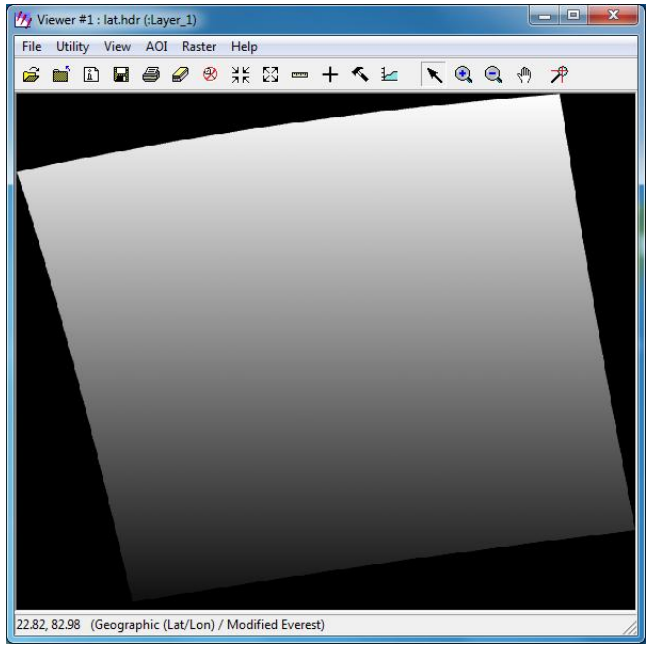
Remote Sensing Input (geo-corrected chl-a image)



MODIS Chlorophyll-a

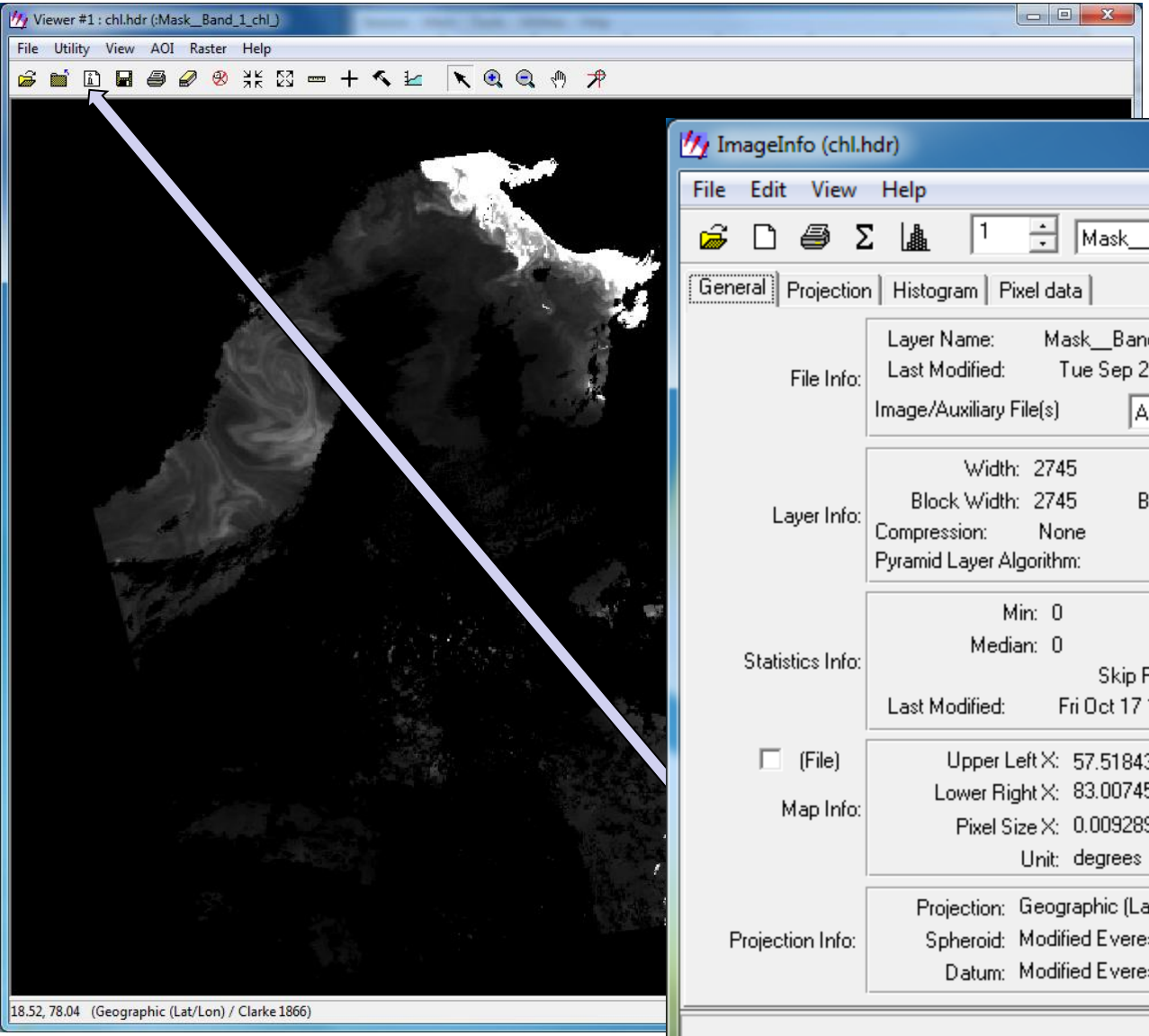


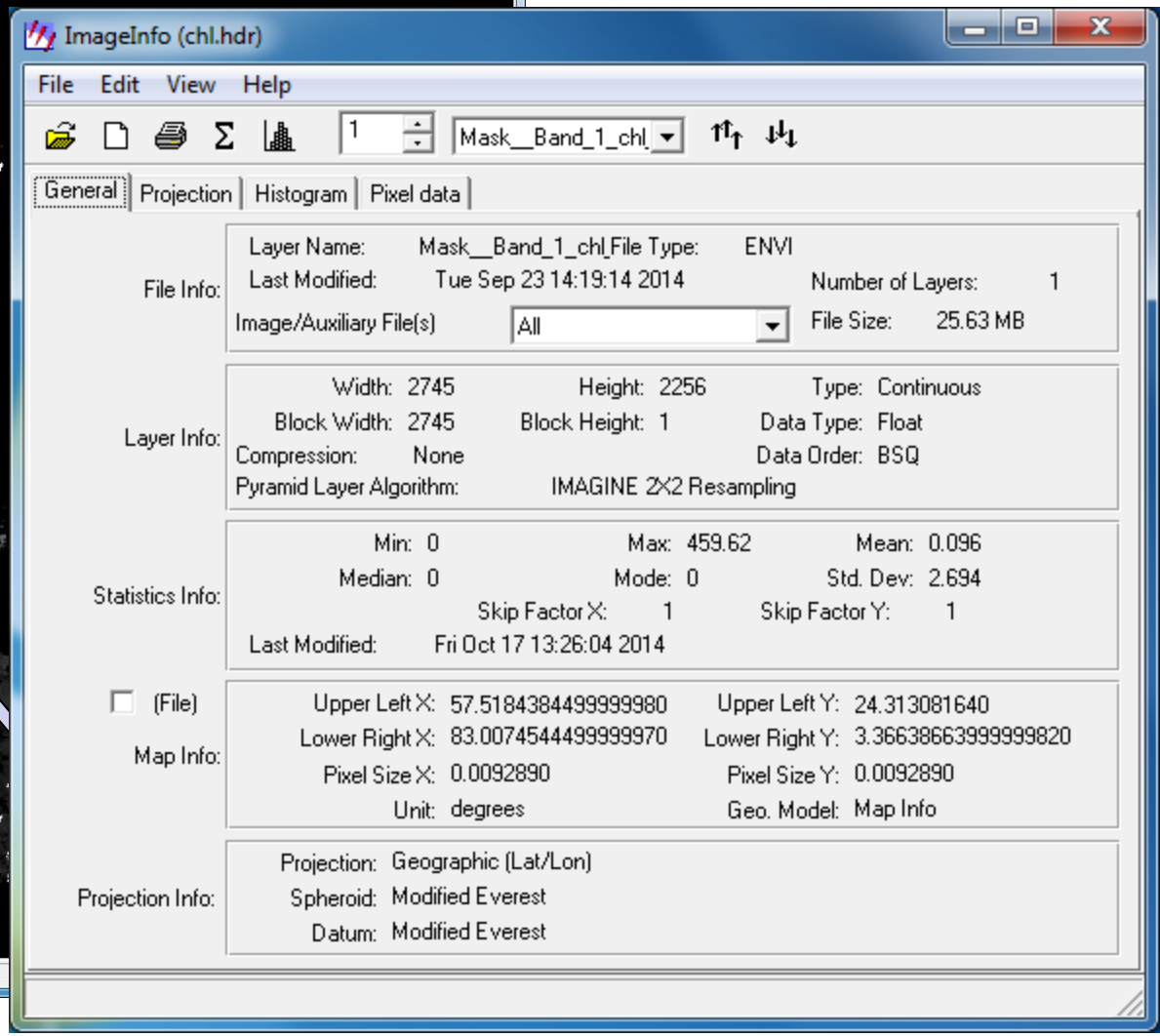
MODIS daily averaged PAR



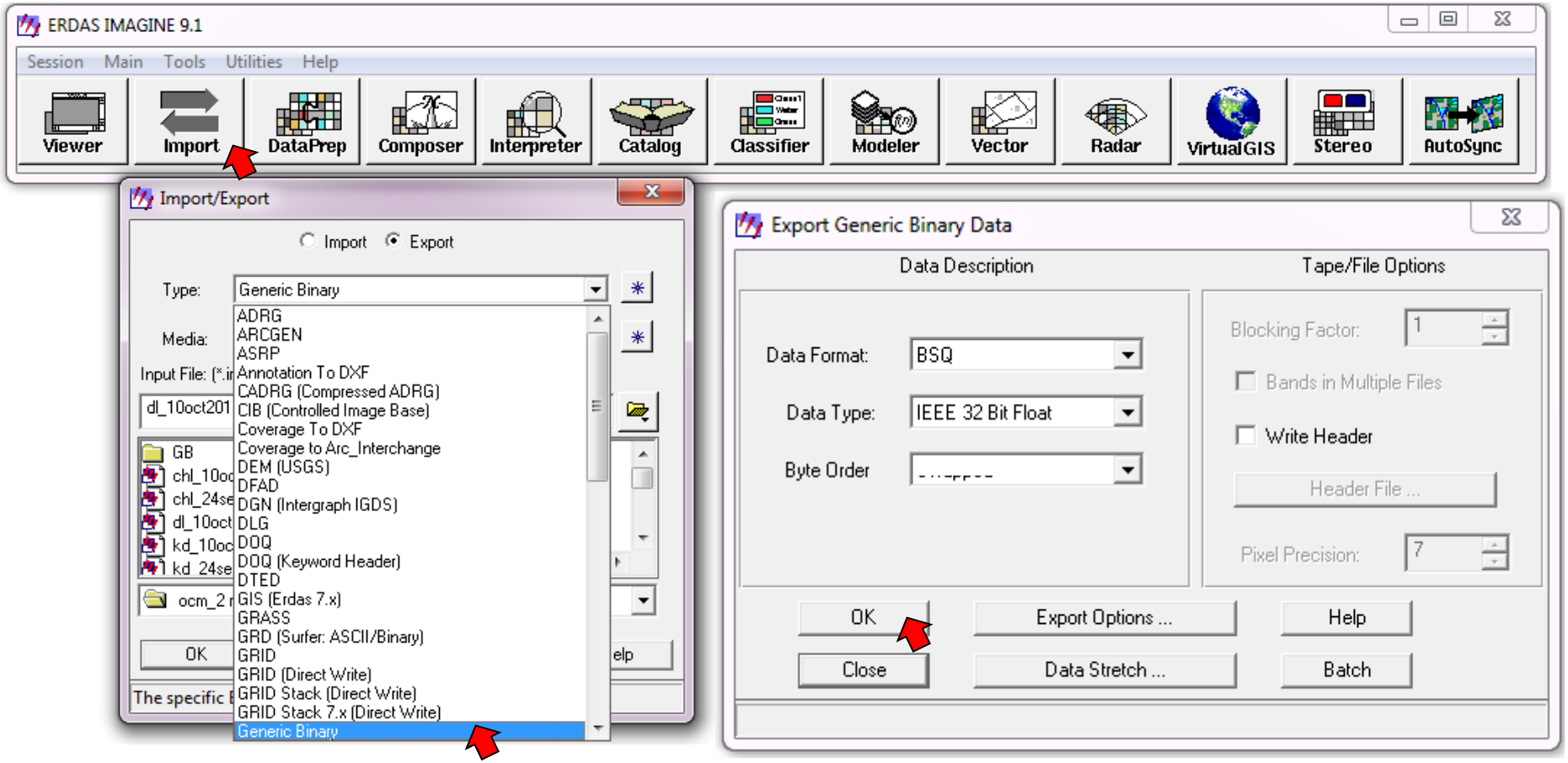
Latitude

Step 1: Reading image geo-location information of chl-a image.





Step 2: Exporting all image files to raster (generic binary format) in ERDAS



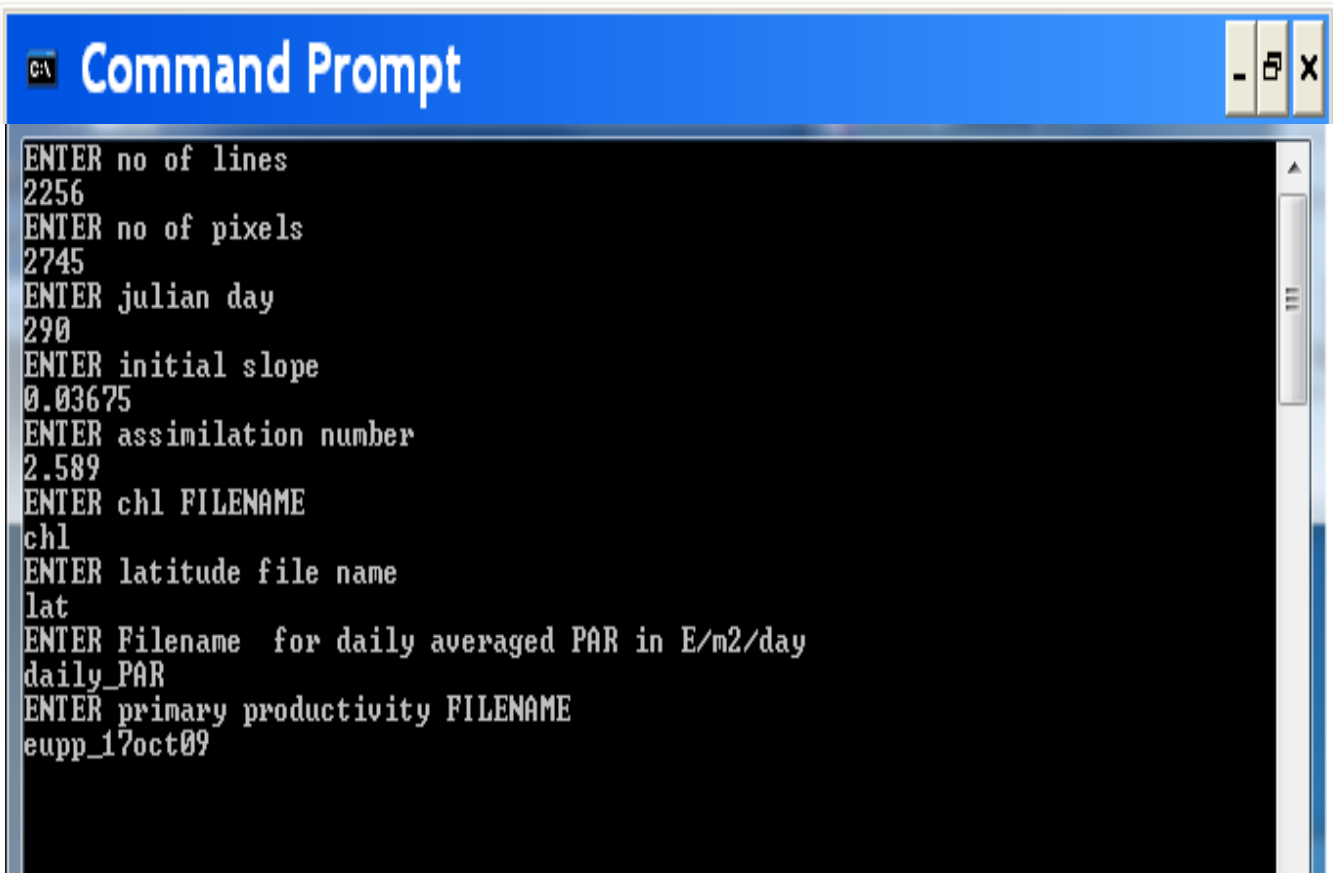
Inputs

- Data Format: BSQ
- Data Type:IEEE32 Bit Float
- .

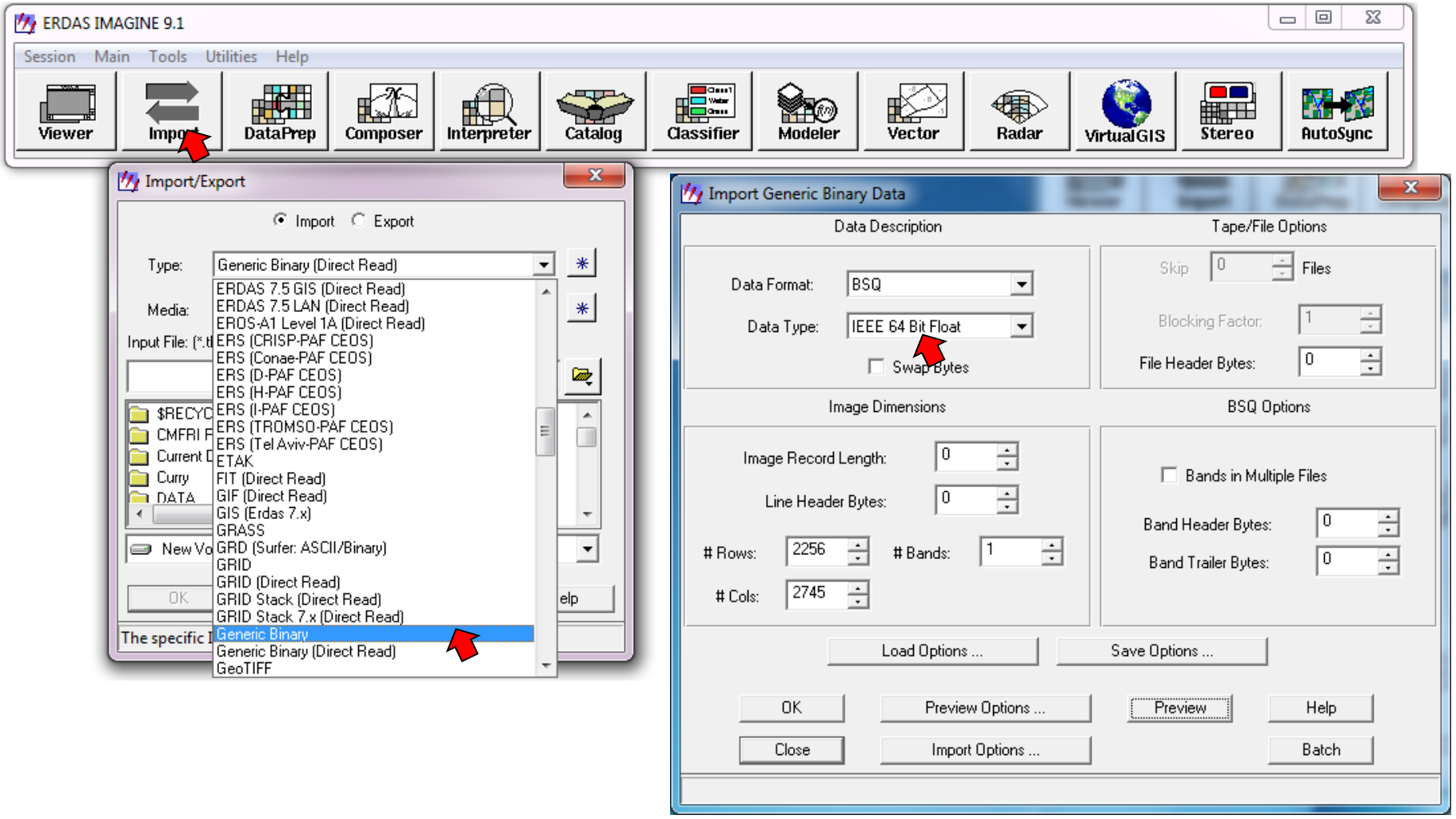
P-I parameters

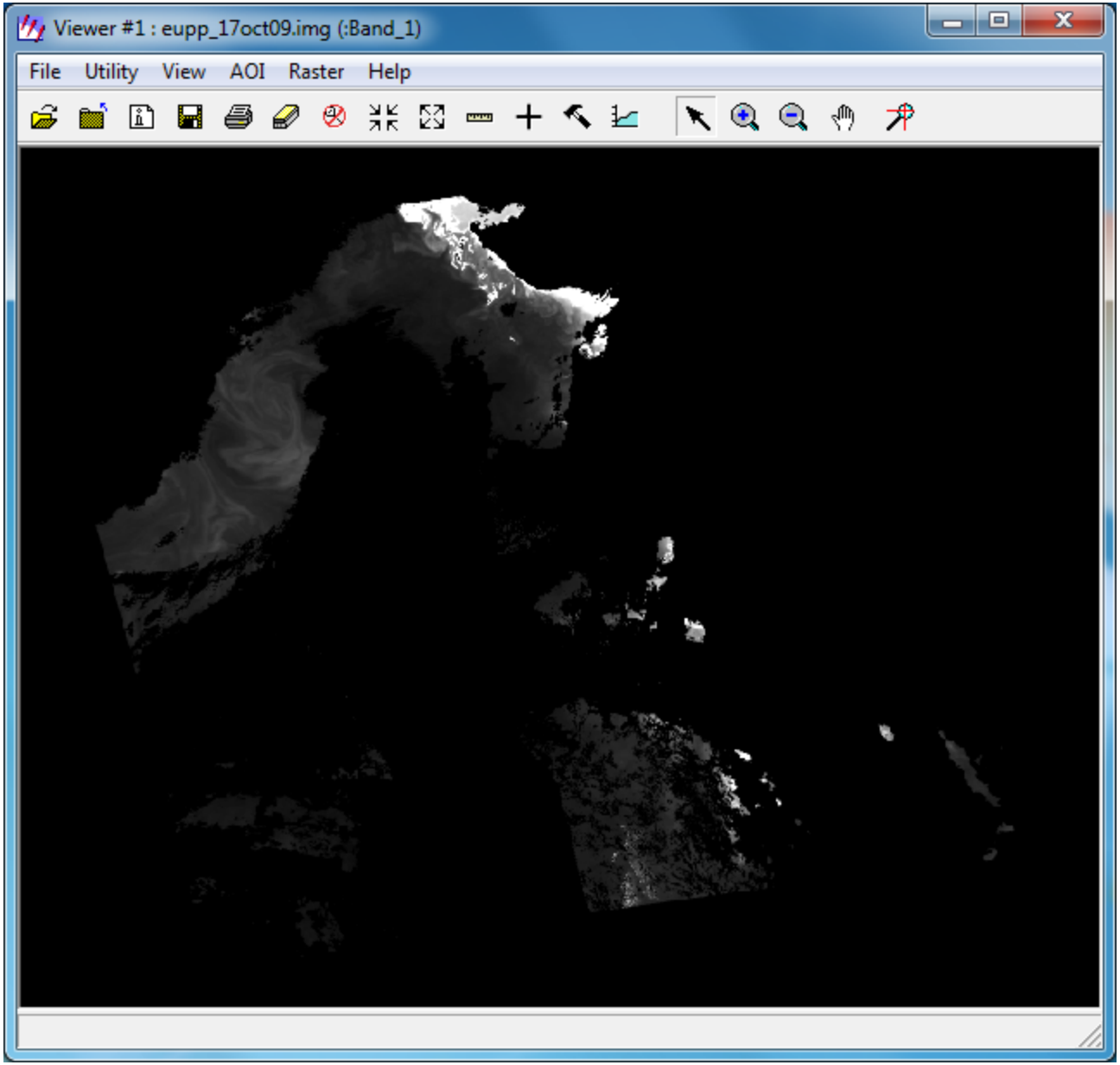
PI curves	initial slope (α^B)	maximum photosynthesis P^B_m
	0.014	8.196
	0.007	9.016
	0.0215	13.32
	0.0371	14.124
	0.606	31.710
	0.075	5.38
	0.0368	3.362
	0.075	4.39
	0.037	1.95
	0.0062	2.39
	0.0103	3.12

Step 3:Executing Euphotic PP Program

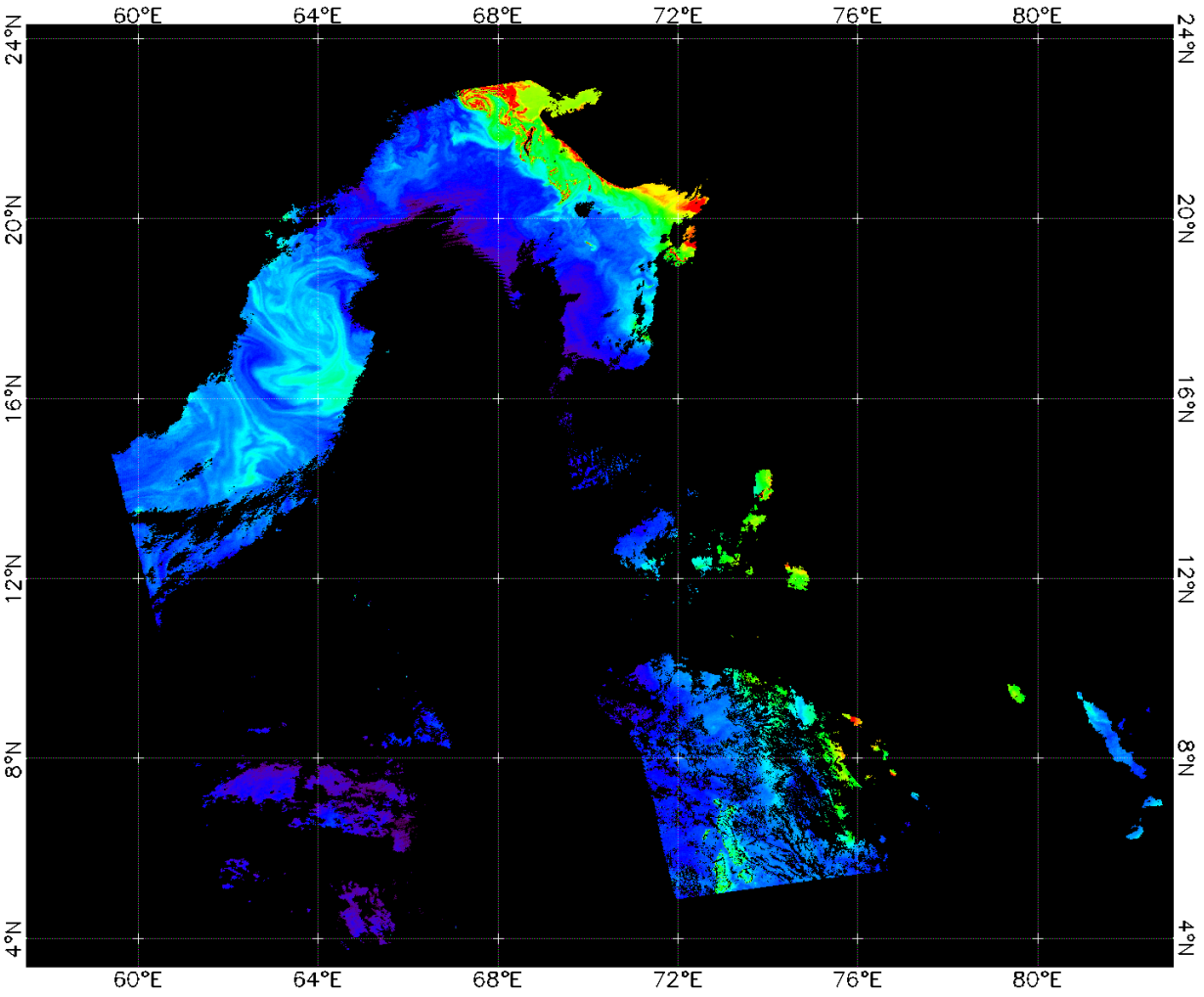


Step 4:Importing Euphotic PP into Image format in ERDAS




Viewer #1 : eupp_17oct09.img (:Band_1)
File
Utility
View
AOI
Raster
Help

EUPP



EUPP

$mgCm^{-2}\text{-}d^{-1}$