# All Sky Plate Solver command line interface.

All Sky Plate Solver is an interactive program and can also be used to solve image fields by calling it in command line mode with arguments.

It comes also as COM object, as explained here: http://astrogb.com/downloads/ASPS_COM.pdf

## Methods:

| Simple method | |
|---|---|
| PlateSolver.exe /solve | All Sky Plate Solver runs as you click the button 'Click, Plate & Solve' |
| | This method is useful when you want to solve fields by calling All Sky Plate Solver from programs able to run external programs, as CCDCommander. |
| | In order to do it, you previously need to run All Sky Plate Solver and enter the Settings form. Then configure General settings, Camera settings and Mount settings. |
| | Of course, you need to enter the Index Installation Wizard and download the indexes related to your hardware. Before using the command line, several tests of plate solving with All Sky Plate Solver interactive are recommended. |

| | Arguments | Type | Notes |
|---|---|---|---|
| | Text | text | Constant: /solve or /SOLVE |

| PlateSolve | | | |
|---|---|---|---|
| PlateSolver.exe /solvefile <FileName> <OutputFile> [<FocalLength>] [<PixelSize>] [<CurrentRA>] [<CurrentDec>] [<NearRadius>] | | | |
| | Performs the plate solving of image file | | |
| | This is the method to execute All Sky Plate Solver hidden, in order to perform plate solving of your image file from your program, and get the result into a text file. The arguments included into brackets are optional. | | |

| | Arguments | Type | Notes |
|---|---|---|---|
| | FileName | text | Star field image file. File format accepted: FITS, JPEG |
| | OutFile | text | Result data of plate solving in .txt format (discussed below) |
| | FocalLength | numeric | Optical system focal length (millimeters) |
| | PixelSize | numeric | Camera pixel size (microns) |
| | CurrentRA | numeric | Approximative right ascension of center of image. J2000 expressed in decimals, optional. |
| | CurrentDec | numeric | Approximative declination of center of image. J2000 expressed in decimals, optional. |
| | NearRadius | numeric | Radius of search if <CurrentRA> and <CurrentDec> are not zero. |

| | Notes: | <FocalLength> and <PixelSize> are critical parameters. In order to to perform fast and reliable plate solving, they are essential. If both are zeroes, the 'Focal length' and 'Pixel size' of Settings window are considered. <br> If the parameters <CurrentRA>, <CurrentDec> and <NearRadius> are not zeroes, the system performs the faster 'Near' plate solving, by using the star catalog around <CurrentRA> and <CurrentDec> coordinates, within <NearRadius> degrees. <br> These parameters passed as zeroes cause the 'Blind' plate solving. <br> If the 'Near' plate solving fails, the 'Blind' plate solving is performed. <br> All the number parameters with decimals must be conventionally expressed with the decimal point separator ('.'). |
|---|---|---|

## OutputFile

| | Line | Type | Values: | Notes |
|---|---|---|---|---|
| 1 | Exit keyword | text | OK | Plate solving performed. |
| | | | ERROR | Unable to perform plate solving |
| 2 | Right ascension | numeric | | Reports the resulting Right Ascension equatorial J2000 coordinate of center of image <FileName>, expressed in decimal degrees. |
| 3 | Declination | numeric | | Reports the resulting Declination equatorial J2000 coordinate of center of image <FileName>, expressed in decimal degrees. |
| 4 | FOV width | numeric | | Image field width (horizontal axis) of image <FileName>, expressed in arcminutes. |
| 5 | FOV height | numeric | | Image field height (vertical axis) of image <FileName>, expressed in arcminutes. |
| 6 | Image scale | numeric | | Scale of image <FileName>, expressed in arcseconds per pixel. |
| 7 | Image rotation | numeric | | Camera rotation of image <FileName>, expressed in decimal degrees. Data convention CROTA2 of .wcs format (world coordinate system). |
| 8 | Focal length | numeric | | Real focal length of optics used, in millimeters. It depends by the pixel size declared in input. |
| | Notes | | Values from 2 to 8 available only if Exit keyword is 'OK'. <br> In case of 'ERROR' the lines > 1 report the description of error. |
| | Error messages: | | The current version accepts only fits and jpeg image files |
| | | | Star index files not found |
| | | | File <FileName> not found |
| | | | Cannot create folder <FolderName>. <br> Try again by launching All Sky Plate Solver as Administrator |
| | | | Cannot copy image file into <DestFileName> |
| | | | Error running Astrometry.net plate solving: <br> 8.1  Check the processing log file <br> 8.2  Wait a few seconds before a new run <br> 8.3 Log file not found |
| | | | Cannot solve image file. Check the processing log file |
| | | | Cannot get RA/Dec wcs data from Astrometry.net library |

| | | Cannot convert jpeg file into fits format |
|---|---|---|
| | | annot perform a new precess while solving |
| | | Invalid FITS header |
| | | Indexes non installed |
| | | Astrometry.net library not installed |
| | | |

| **ReturnMessage** | | | |
|---|---|---|---|
| Type | Type | Mode | |
| Property | bstr | Out | |
| Notes | At end of plate solving methods, <ReturnMessage> contains the message corresponding to the <ReturnCode> property | | |

Examples:

“C:\Program Files (x86)\PlateSolver\PlateSolver.exe" /SOLVEFILE "C:\Temp\MyAstroImage.jpg" “C:\Temp\Result.txt” 1000 7.4 3

“C:\Program Files (x86)\PlateSolver\PlateSolver.exe" /SOLVEFILE "C:\Temp\MyAstroImage.jpg" “C:\Temp\Result.txt” 600.0 9.0 43.99 60.39 5.0

Output examples:

OK
43.9987030991
60.3910687371
210
210
6.16
-0.63
600

ERROR
Cannot solve image file. Check the processing log file

## Other methods:

| **Settings** | | | |
|---|---|---|---|
| PlateSolver.exe /sfsettings | All Sky Plate Solver shows the Settings page | | |
| This method is useful to enter the Settings window by calling All Sky Plate Solver from your own software. | | | |
| Arguments | Type | Notes | |
| Text | text | Constant:  /sfsettings or  /SFSETTINGS | |

| Settings | | |
|---|---|---|
| PlateSolver.exe /sfindex | | All Sky Plate Solver shows the Index Installation Wizard |
| | This method is useful to enter the Index Installation Wizard window by calling All Sky Plate Solver from your own software. | |
| | Arguments | Type | Notes |
| | Text | text | Constant:  /sfindex or  /SFINDEX |
| | | |