ThresHolds – Variables list with descriptions

This document is designed to provide the parameters for the settings editor **ThresHolds.exe** that are used in the CoLiTec software.

The document contains the following information about each parameter:

1. Index number;
2. Identifier in the settings editor **ThresHolds**;
3. Parameter name in the settings editor **ThresHolds**;
4. Parameter full name;
5. Comments;
6. Parameter location in the settings editor **ThresHolds** (Section / Form);
7. Variable type in the program *(4 standard **Delphi** data types are used: **boolean** – boolean type [true; false], **string** – string type ["string"], **int** – integer type (32-bit) [from -2^{31} to 2^{31}], **double** – real type [from $2.23 * 10^{-308}$ to $1.79 * 10^{308}$])*;
8. Adjustment range *(Contains a range of parameter values and its unit of measurement);*
9. CoLiTec software module, which uses this parameter.

Content:

1. User settings

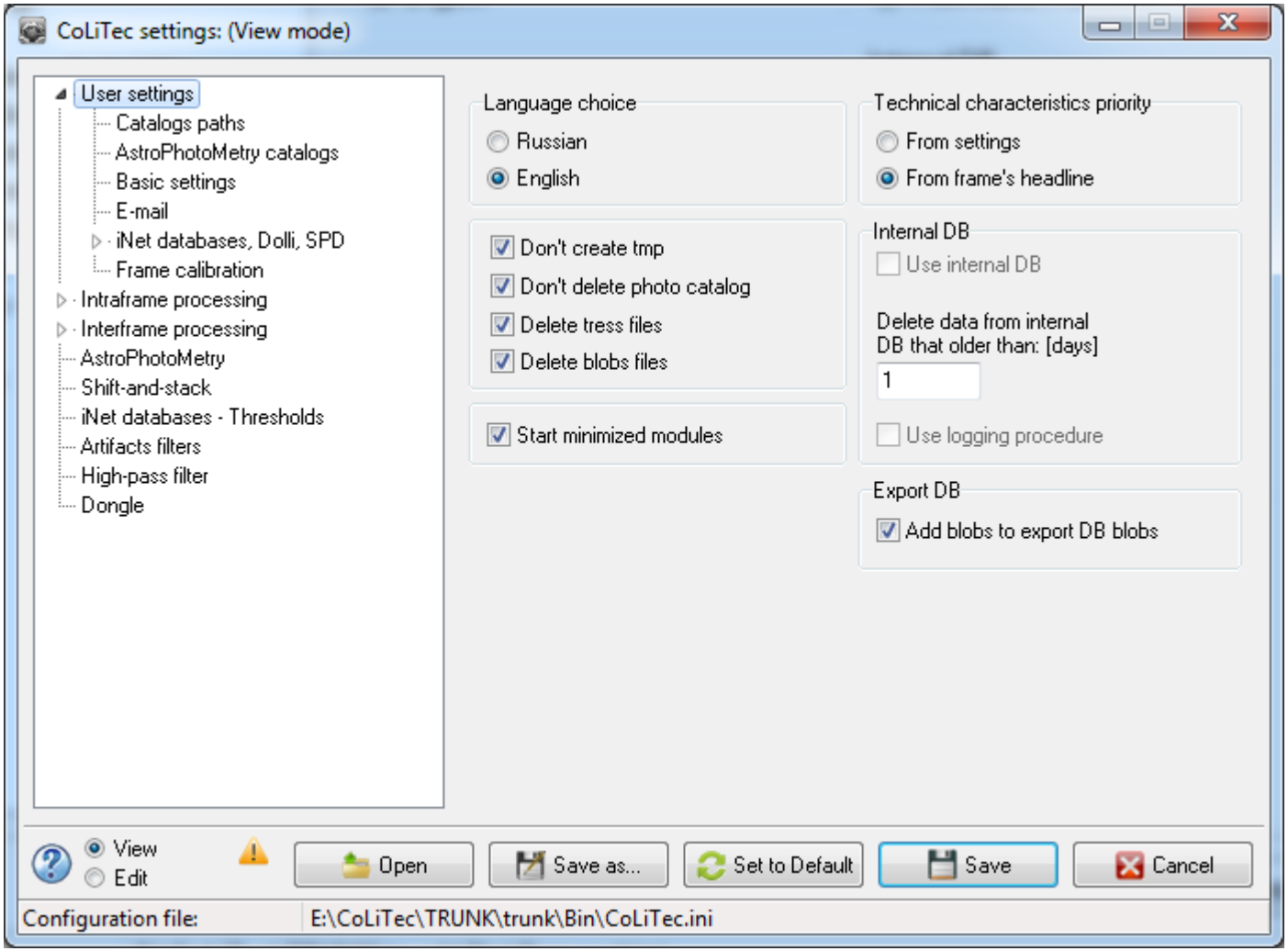

Figure 1. «**User settings**» section view

Table 1. Variables list in «**User settings**» section

№	Identifier	Parameter name	Full name	Comments	Location	Type	Adjustment range	Module, which uses
1	2	3	4	5	6	7	8	9
1	RadioButton7	From settings	Sets the use of technical characteristic values of the equipment from the setting file.	Technical characteristics of equipment include focal length, pixel size, etc. These settings are located in corresponding settings editor and can be used when information about technical characteristics of the equipment, taken from the frame headline, is not enough.	Technical characteristics priority	bool	[true; false]	POCLT
2	RadioButton13	From frame's headline	Sets the use of technical characteristics values of the equipment from the frame headline.			bool	[true; false]	POCLT
3	RadioButton17	Russian	Sets Russian / English language for settings.	Sets Russian / English language for titles in settings of all CoLiTec software modules.	Language choice	bool	[true; false]	CoLiTec, POCLT, VKCLT, VOCLT, OLDAS, CLTClon, CosmCLT, TressHolds
4	RadioButton18	English				bool	[true; false]	CoLiTec, POCLT, VKCLT, VOCLT, OLDAS, CLTClon, CosmCLT, TressHolds
5	CheckBox3	Don't create tmp	Enables / disables the temporary files creation.	Intermediate data files are used by the developer to test the program and to identify problem areas in its work.	-	bool	[true; false]	CoLiTec, POCLT, VKCLT, VOCLT, OLDAS, CLTClon, CosmCLT
6	CheckBox35	Delete tress files	Enables / disables the thresholds files deletion.	-		bool	[true; false]	POCLT, VKCLT, VOCLT, CLTClon, CosmCLT
7	CheckBox36	Delete blobs files	Enables / disables the blobs files deletion.	The blobs files allow you to view a blobs formed by the program.		bool	[true; false]	CoLiTec, POCLT, VKCLT, VOCLT

8	CheckBox7	Start minimized modules	Enables / disables minimized mode for CoLiTec modules.	Some modules (CosmCLT, VKCLT) are launched by CoLiTec software during processing. *For Windows:* recommend to enable this option for user usability; *For Linux with Wine emulator:* recommend to disable this option to properly launch the console modules.		bool	[true; false]	CoLiTec, VKCLT, OLDAS, CLTClon, CosmCLT
9	CheckBox38	Add blobs to DB blobs	Enables / disables the blobs adding to the blobs database.	-	Export DB	bool	[true; false]	CoLiTec, POCLT, VKCLT, VOCLT
10	LabeledEdit2	Delete data from the internal DB that older than: [days]	The number of days for deleting data from the internal database that older than the specified parameter.	-	Intenal DB	int	0-99999, days	CoLiTec, RunDB.exe
11	CheckBox16	Use internal DB	Enables / disables usage of internal database.	In the enabled mode all temporary data (marks etc.) will be created as files in the zone directory. *For Windows:* recommend to enable this option for user usability and modules acceleration; *For Linux with Wine emulator:* recommend to disable this option to properly launch the console modules. The usual text files will be created instead of the internal DB. ***No data will be missed!***		bool	[true; false]	CoLiTec, POCLT, VKCLT, VOCLT, OLDAS, CLTClon, CosmCLT, TressHolds
12	CheckBox8	Use logging procedure	Enables / disables logging procedure.	Logging procedure will write status messages in the internal DB due to the processing. Messages will be read by the monitor system.		bool	[true; false]	CoLiTec, POCLT, VKCLT, VOCLT, OLDAS, ThresHolds
13	CheckBox9	Don't delete photo catalog	Enables / disables deletion mode for the photo catalog files.	Photo catalog files are created during CoLiTec software processing. For using hand measuring function in the LookSky viewer recommended to enable this mode.	-	bool	[true; false]	CoLiTec, LookSky

1.1 Catalogs paths

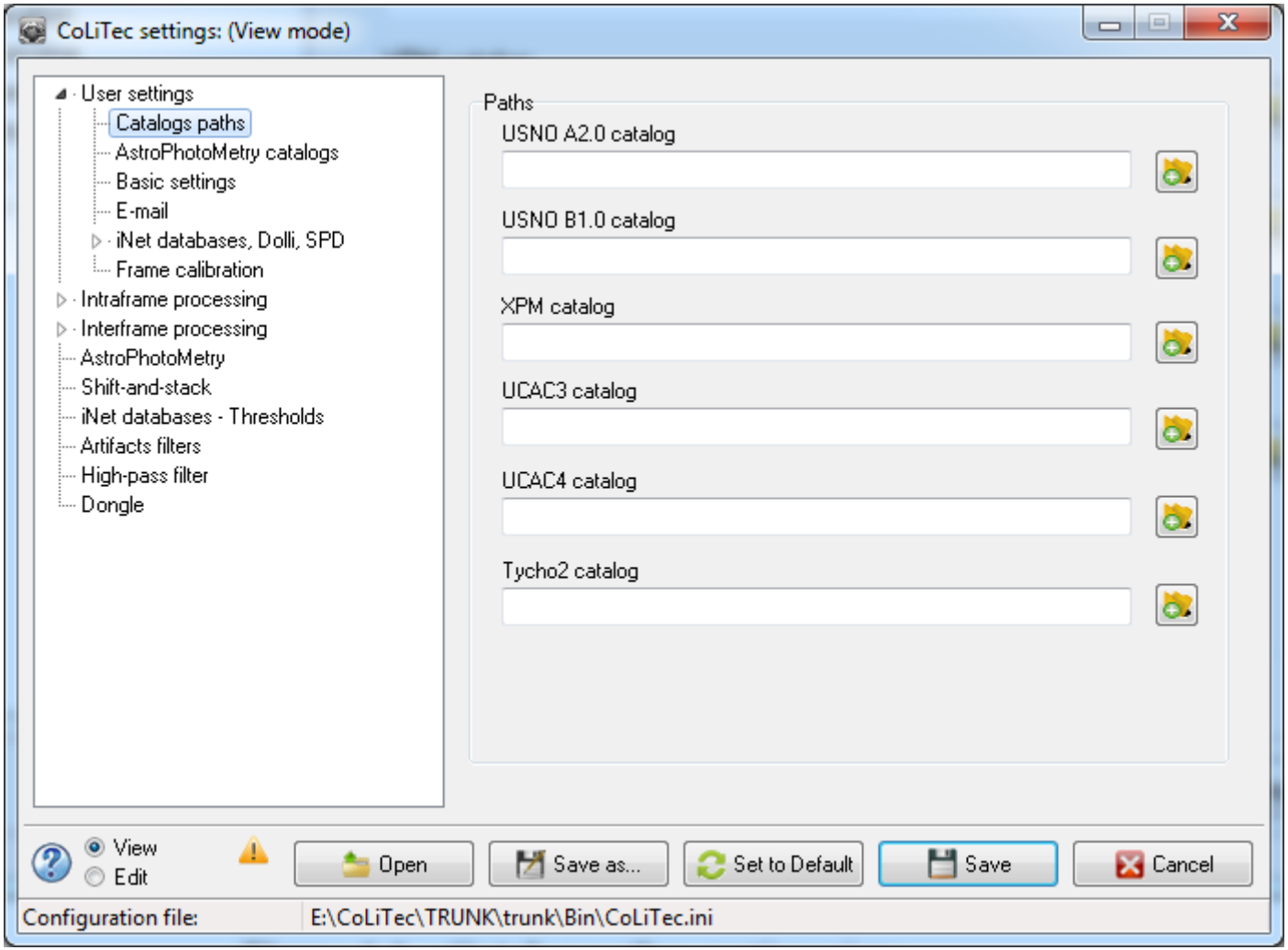

Figure 1.1. «Catalog paths» section view

Table 1.1. Variables list in «**Catalogs paths**» section

№	Identifier	Parameter name	Full name	Comments	Location	Type	Adjustment range	Module, which uses
1	2	3	4	5	6	7	8	9
1	LabeledEdit109	USNO A2.0 catalog	Contains path to the USNO A2.0 catalog.	Is used more often for photometry than for astrometry.	Paths	string	Catalog path	POCLT, VKCLT
2	LabeledEdit110	USNO B1.0 catalog	Contains path to the USNO B1.0 catalog.	Is used more often for photometry than for astrometry.				POCLT, VKCLT
3	LabeledEdit18	XPM catalog	Contains path to the XPM catalog.	Is used more often for photometry than for astrometry.				POCLT, VKCLT
4	LabeledEdit19	UCAC3 catalog	Contains path to the UCAC3 catalog.	Is used more often for astrometry, catalog is limited of brightness to 17^{m}.				POCLT, VKCLT
5	LabeledEdit29	UCAC4 catalog	Contains path to the UCAC4 catalog.	Is used more often for astrometry, catalog is limited of brightness to 16^{m}.				POCLT, VKCLT
6	LabeledEdit12	Tycho2 catalog	Contains path to the Tycho2 catalog.	Is used more often for astrometry, catalog is limited of brightness to 15^{m}.				POCLT, VKCLT
7	LabeledEdit112	MPC catalog (MPCORB.DAT)	Contains path to the MPC catalog (MPCORB.DAT).	**Function is not available**.				VKCLT, VOCLT

1.2. AstroPhotoMetry catalogs

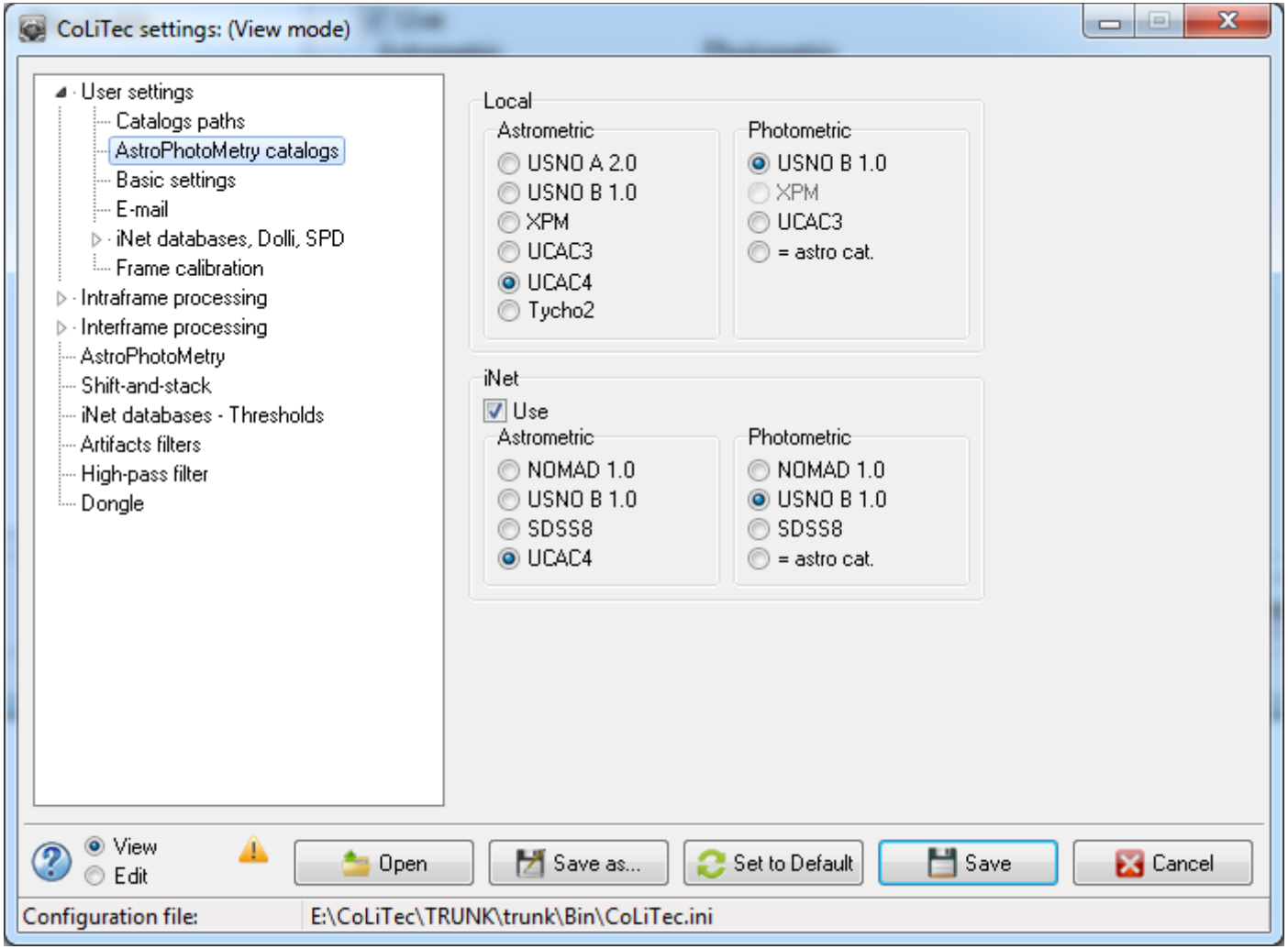

Figure 4.2. «AstroPhotoMetry catalogs» section view

Table 4.2. Variables list in «**AstroPhotoMetry catalogues**» section

№	Identifier	Parameter name	Full name	Comments	Location	Type	Adjustment range	Module, which uses
1	2	3	4	5	6	7	8	9
1	RadioButton21	USNO A2.0	Sets USNO A2.0 catalog for astrometry.	-	Catalogs / Local/ Astrometric	bool	[true; false]	VKCLT
2	RadioButton22	USNO B1.0	Sets USNO B1.0 catalog for astrometry.	-		bool	[true; false]	VKCLT
3	RadioButton3	XPM	Sets XPM catalog for astrometry.	-		bool	[true; false]	VKCLT
4	RadioButton4	UCAC3	Sets UCAC3 catalog for astrometry.	-		bool	[true; false]	VKCLT
5	RadioButton56	UCAC4	Sets UCAC4 catalog for astrometry.	-		bool	[true; false]	VKCLT
6	RadioButton27	Tycho2	Sets Tycho2 catalog for astrometry.	-		bool	[true; false]	VKCLT
7	RadioButton5	USNO B1.0	Sets USNO B1.0 catalog for photometry.	-	Catalogs / Local / Photometric	bool	[true; false]	VKCLT
8	RadioButton6	XPM	Sets XPM catalog for photometry. (***is not available for selection***).	-		bool	[true; false]	VKCLT
9	RadioButton2	UCAC3	Sets UCAC3 catalog for photometry.	-		bool	[true; false]	VKCLT
10	RadioButton1	= astro cat.	Photo Catalog is the same as Astro Catalog.	-		bool	[true; false]	VKCLT
11	CheckBox32	Use	Enables / disables iNet catalogs.	-	Catalogs / Inet	bool	[true; false]	VKCLT
12	RadioButton46	NOMAD 1.0	Sets NOMAD 1.0 catalog for astrometry.	-	Catalogs / Inet / Astrometric	bool	[true; false]	VKCLT
13	RadioButton47	USNO B1.0	Sets USNO B1.0 catalog for astrometry.	-		bool	[true; false]	VKCLT
14	RadioButton48	SDSS8	Sets SDSS8 catalog for astrometry.	-		bool	[true; false]	VKCLT
15	RadioButton49	UCAC4	Sets UCAC4 catalog for astrometry.	-		bool	[true; false]	VKCLT
16	RadioButton51	NOMAD 1.0	Sets NOMAD 1.0 catalog for photometry.	-	Catalogs / Inet / Photometric	bool	[true; false]	VKCLT
17	RadioButton52	USNO B1.0	Sets USNO B1.0 catalog for photometry.	-		bool	[true; false]	VKCLT
18	RadioButton54	SDSS8	Sets SDSS8 catalog for photometry.	-		bool	[true; false]	VKCLT
19	RadioButton53	= astro cat.	Photo Catalog is the same as Astro Catalog.	-		bool	[true; false]	VKCLT

1.3 Basic settings

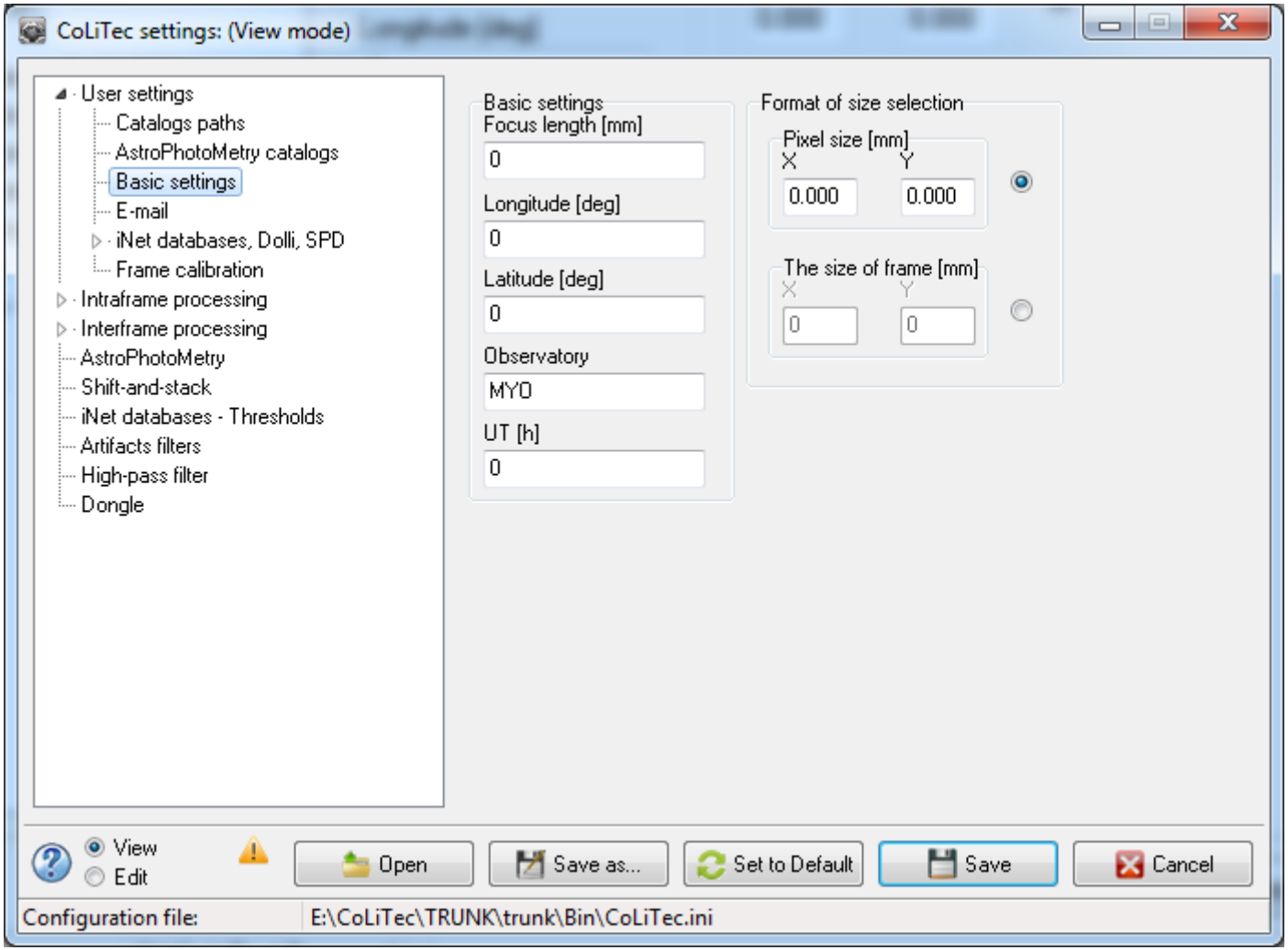

Figure 1.3. «Basic settings» section view

Table 1.3. Variables list in «**Basic settings**» section

№	Identifier	Parameter name	Full name	Comments	Location	Type	Adjustment range	Module, which uses
1	2	3	4	5	6	7	8	9
1	LabeledEdit8	Focus length [mm]	Focus length value in millimeters.	From the optical instrument description.	Basic settings	double	From instrument description, millimeters	POCLT, VKCLT
2	LabeledEdit5	Longitude [deg]	Longitude value in degrees.	Telescope location.		double	0.000-359.999, degrees	VKCLT, VOCLT
3	LabeledEdit6	Latitude [deg]	Latitude value in degrees.	Telescope location.		double	-90.000-90.000, degrees	VKCLT, VOCLT
4	LabeledEdit4	Observatory	Observatory name.	-		string	From instrument description	VKCLT, VOCLT
5	LabeledEdit106	UT [h]	UT value in hours.	Is used to determine a date of the working night on UTC.		int	-12…12, hours	POCLT
6	LabeledEdit9	X	Pixel size value by X.	-	Basic settings / Size selection format / Pixel size [mm]	double	From instrument description, millimeters	POCLT, VKCLT, VOCLT
7	LabeledEdit10	Y	Pixel size value by Y.	-		double	From instrument description, millimeters	POCLT, VKCLT, VOCLT
8	LabeledEdit70	X	Frame size value by X.	-	Basic settings / Size selection format / Frame size [mm]	int	From instrument description, millimeters	POCLT, VKCLT, VOCLT
9	LabeledEdit72	Y	Frame size value by Y.	-		int	From instrument description, millimeters	POCLT, VKCLT, VOCLT
10	RadioButton42	Pixel size [mm]	Sets size selection format in pixels.	-	Basic settings / Size selection format	bool	[true; false]	VKCLT
11	RadioButton43	Frame size [mm]	Sets size selection format in frames.	-		bool	[true; false]	POCLT, VKCLT, VOCLT

1.4. E-mail

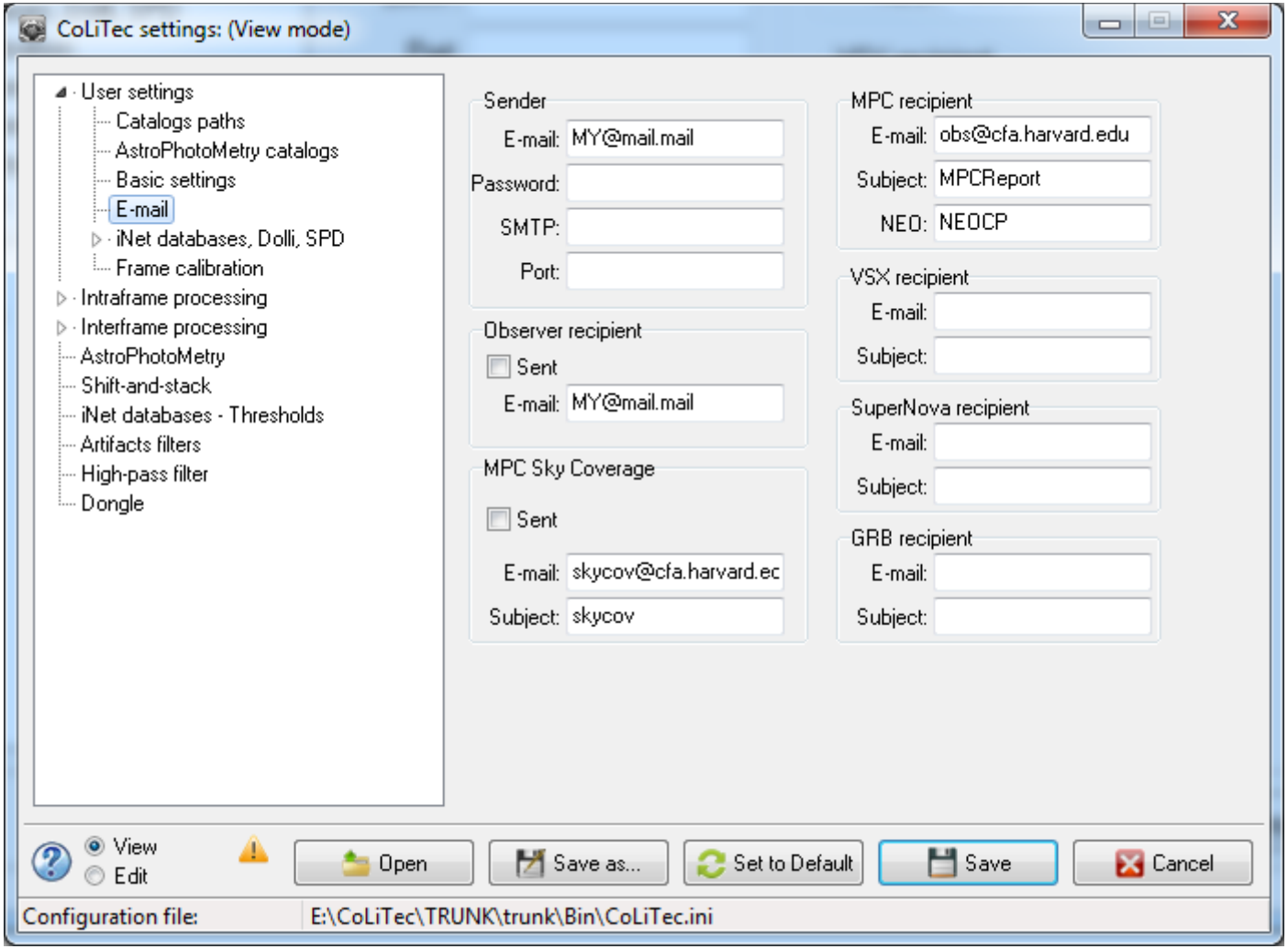

Figure 1.4. «**E-mail**» section view

Table 1.4. Variables list in «**E-mail**» section

№	Identifier	Parameter name	Full name	Comments	Location	Type	Adjustment range	Module, which uses
1	2	3	4	5	6	7	8	9
1	LabeledEdit93	E-mail	Sender E-mail address.	-	E-mail / Sender	string	-	VOCLT
2	LabeledEdit101	Password	Password field (hidden input #).	-		string	-	VOCLT
3	LabeledEdit90	SMTP	SMTP value (mail server).	Sender SMTP value (widely used network protocol for sending e-mail through networks TCP / IP).		string	-	VOCLT
4	LabeledEdit91	Port	Port number.	Port number which will be used for E-mail sending to each recipient.		int	-	VOCLT
5	LabeledEdit102	E-mail	MPC recipient E-mail address.	-	E-mail / MPC recipient	string	-	VOCLT
6	LabeledEdit103	Subject	E-mail subject.	-		string	-	VOCLT
7	LabeledEdit151	NEO	Minimum acceptable value of NEO-rating, in which the program recommends sending a message to NEOCP.	The minimum value of NEO-rating, in which viewer will highlight object by marker.		string	-	VOCLT
8	LabeledEdit108	E-mail	VSX recipient E-mail address.	-	E-mail / VSX recipient	string	-	VOCLT
9	LabeledEdit111	Subject	E-mail subject.	-		string	-	VOCLT
10	LabeledEdit114	E-mail	SuperNova recipient E-mail address.		E-mail / SuperNova recipient	string	-	VOCLT
11	LabeledEdit115	Subject	E-mail subject.	-		string	-	VOCLT
12	LabeledEdit113	E-mail	GRB recipient E-mail address.	-	E-mail / GRB recipient	string	-	
13	LabeledEdit116	Subject	E-mail subject.	-		string	-	VOCLT
14	LabeledEdit134	E-mail	MPC Sky Coverage recipient E-mail address.	-	E-mail / MPC Sky Coverage	string	-	VOCLT
15	LabeledEdit139	Subject	E-mail subject.	-		string	-	VOCLT
16	CheckBox30	Sent	Turns on / off sending to MPC Sky Coverage.	-		bool	[true; false]	VOCLT
17	LabeledEdit85	E-mail	Observer recipient E-mail address.	-	E-mail / Recipient Observer	string	-	VOCLT
18	CheckBox31	Sent	Turns on / off sending to Observer recipient.	-		bool	[true; false]	VOCLT

1.5. iNet databases, Dolli, SPD

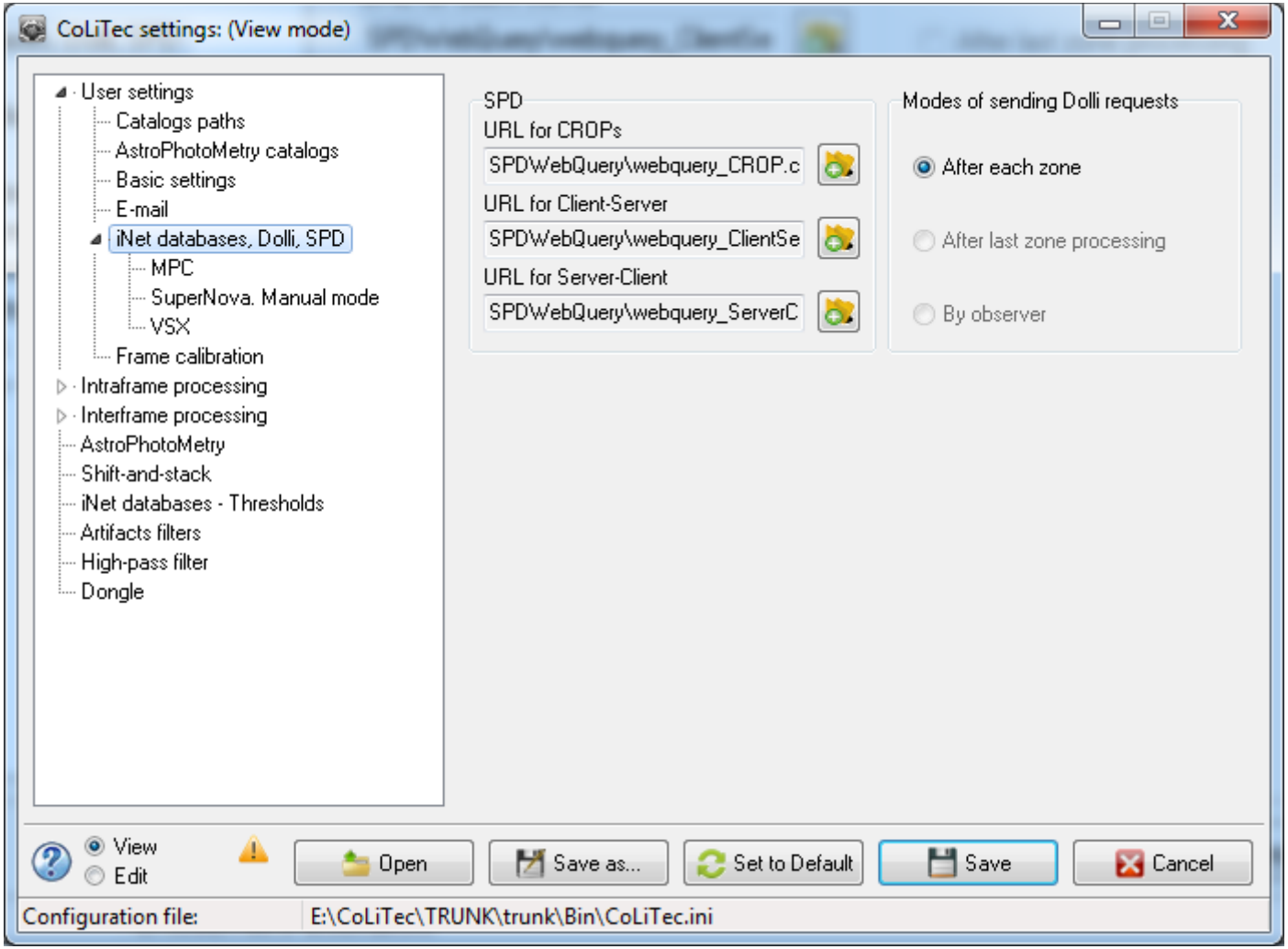

Figure 1.5. «iNet databases, Dolli, SPD» section view

Table 1.5. Variables list in «**iNet databases, Dolli, SPD**» section

№	Identifier	Parameter name	Full name	Comments	Location	Type	Adjustment range	Module, which uses
1	2	3	4	5	6	7	8	9
1	RadioButton29	After each zone	Sets “After each zone” mode of sending Dolli requests.	-	Modes of sending Dolli requests	bool	[true; false]	VOCLT, LookSky
2	RadioButton30	After last zone processing	Sets “After last zone processing” mode of sending Dolli requests. ***(is not available for selection)***	-		bool	[true; false]	VOCLT, LookSky
3	RadioButton31	By operator	Sets “By operator” mode of sending Dolli requests. ***(is not available for selection)***	-		bool	[true; false]	VOCLT, LookSky
4	LabeledEdit145	URL for CROPs	Access path (URL) for CROPs (*.cfg file).	-	SPD	string	-	VOCLT, LookSky
5	LabeledEdit146	URL for Client-Server	Access path (URL) for Client-Server (*.cfg file).	-		string	-	VOCLT, LookSky
6	LabeledEdit147	URL for Server-Client	Access path (URL) for Server-Client (*.cfg file).	-		string	-	VOCLT, LookSky

1.5.1. MPC

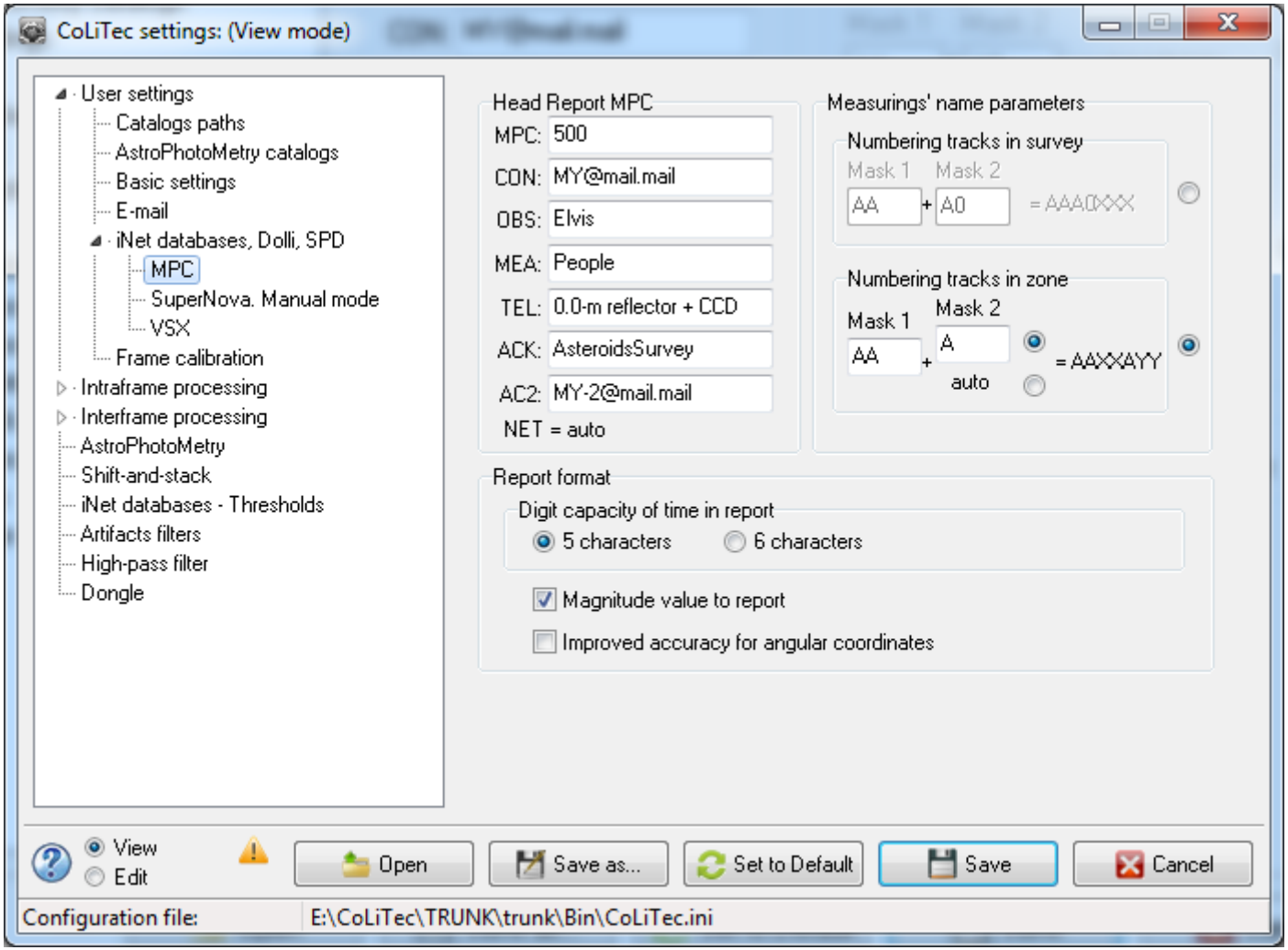

Figure 1.5.1. «**MPC**» section view

Table 1.5.1. Variables list in «**MPC**» section

№	Identifier	Parameter name	Full name	Comments	Location	Type	Adjustment range	Module, which uses
1	2	3	4	5	6	7	8	9
1	LabeledEdit15	MPC	MPC value – observatory code.	Full description is available on official MPC web-site http://www.minorplanetcenter.net/iau/info/ObsDetails.html	MPC / Head Report MPC	string	-	VOCLT, LookSky
2	LabeledEdit16	CON	Observer E-mail.	-		string	-	VOCLT, LookSky
3	LabeledEdit38	OBS	Observer name.	-		string	-	VOCLT, LookSky
4	LabeledEdit141	MEA	So-observer name.	-		string	-	VOCLT, LookSky
5	LabeledEdit17	TEL	Telescope name.	-		string	-	VOCLT, LookSky
6	LabeledEdit122	ACK	Survey name.	-		string	-	VOCLT, LookSky
7	LabeledEdit54	AC2	Observer E-mail.	-		string	-	VOCLT, LookSky
8	LabeledEdit32	Mask 1	Mask 1 value in the numbering tracks in survey.	-	MPC / Measurings' name parameters / Numbering tracks in survey	string	2 symbols	VOCLT
9	LabeledEdit33	Mask 2	Mask 2 value in the numbering tracks in survey.	-		string	2 symbols	VOCLT
10	RadioButton35	Numbering tracks in survey	Sets numbering tracks in survey mode.	-	MPC / Measurings' name parameters	bool	[true; false]	VOCLT
11	RadioButton36	Numbering tracks in zone	Sets numbering tracks in zone mode.	-		bool	[true; false]	VOCLT
12	LabeledEdit34	Mask 1	Mask 1 value in the numbering tracks in zone.	-	MPC / Measurings' name parameters / Numbering tracks in zone	string	2 symbols	VOCLT
13	LabeledEdit35	Mask 2	Mask 2 value in the numbering tracks in zone.	-		string	1 symbol	VOCLT
14	RadioButton28	Manual	Sets manual mode for input Mask 2 value in the numbering tracks in zone.	-		bool	[true; false]	VOCLT
15	RadioButton38	Auto	Sets auto incremented mode for input Mask 2 value in the numbering tracks in zone.	-		bool	[true; false]	VOCLT

16	RadioButton8	5 characters	Sets the value of time with 5 characters after comma.	-	Report format / Digit capacity of time in report	bool	[true; false]	VOCLT
17	RadioButton9	6 characters	Sets the value of time with 6 characters after comma.	-		bool	[true; false]	VOCLT
18	CheckBox19	Magnitude value to report	Magnitude value will be added to MPC report.	-	Report format	bool	[true; false]	VOCLT
19	CheckBox20	Improved accuracy for angular coordinates	Sets improved accuracy for angular coordinates RA and DE in MPC report.	If "true" angular coordinate RA will be added to MPC report with 3 characters after comma and for DE - with 4 characters after comma.		bool	[true; false]	VOCLT

1.5.2. SuperNova. Manual mode

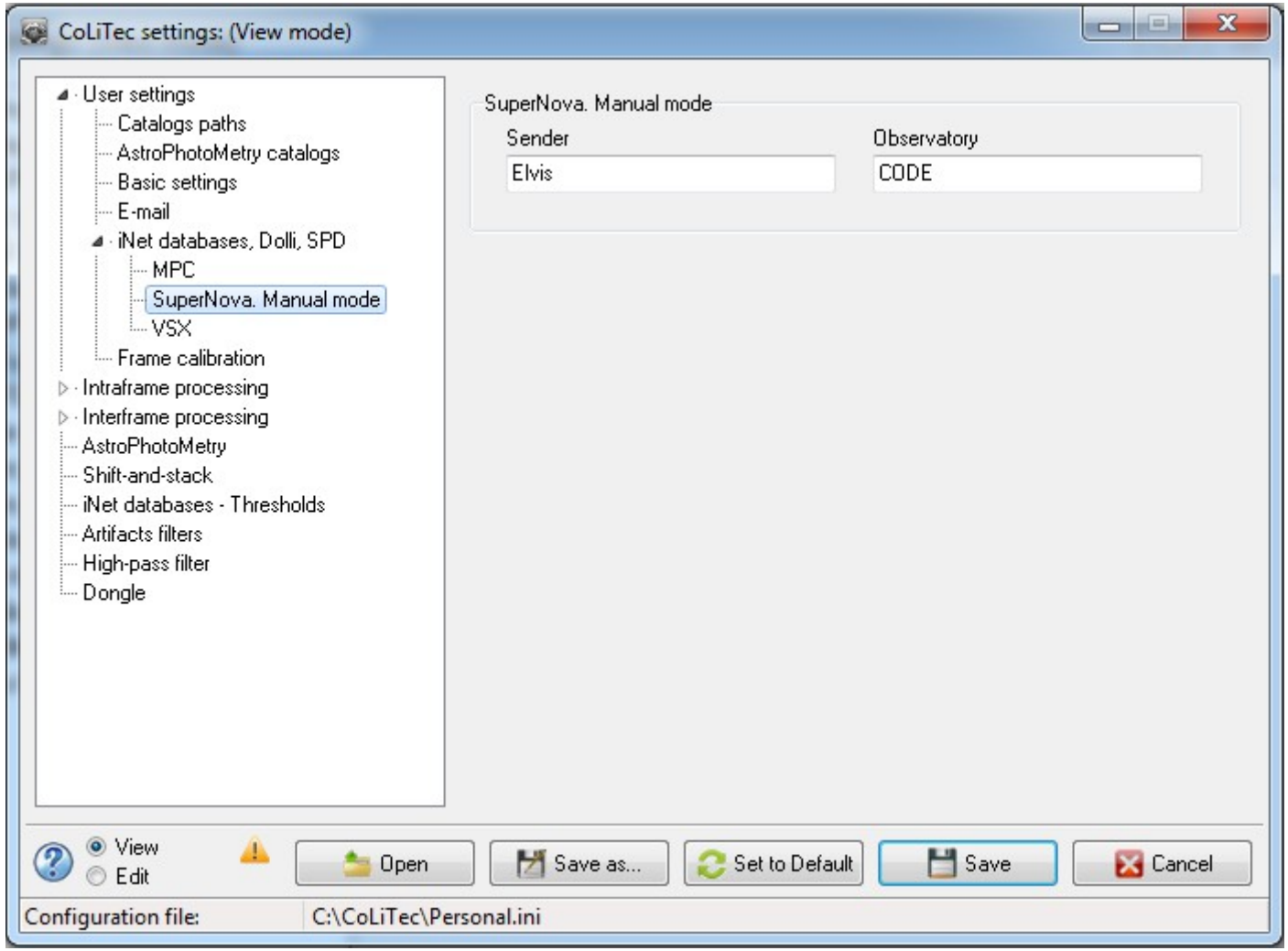

Figure 1.5.2. «**SuperNova. Manual mode**» section view

Table 1.5.2. Variables list in «**SuperNova. Manual mode**» section

№	Identifier	Parameter name	Full name	Comments	Location	Type	Adjustment range	Module, which uses
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
1	LabeledEdit82	Sender	Observer name.	-	SuperNova. Manual mode	string	-	VOCLT
2	LabeledEdit84	Observatory	Observatory name.	-		string	-	VOCLT

1.5.3. VSX

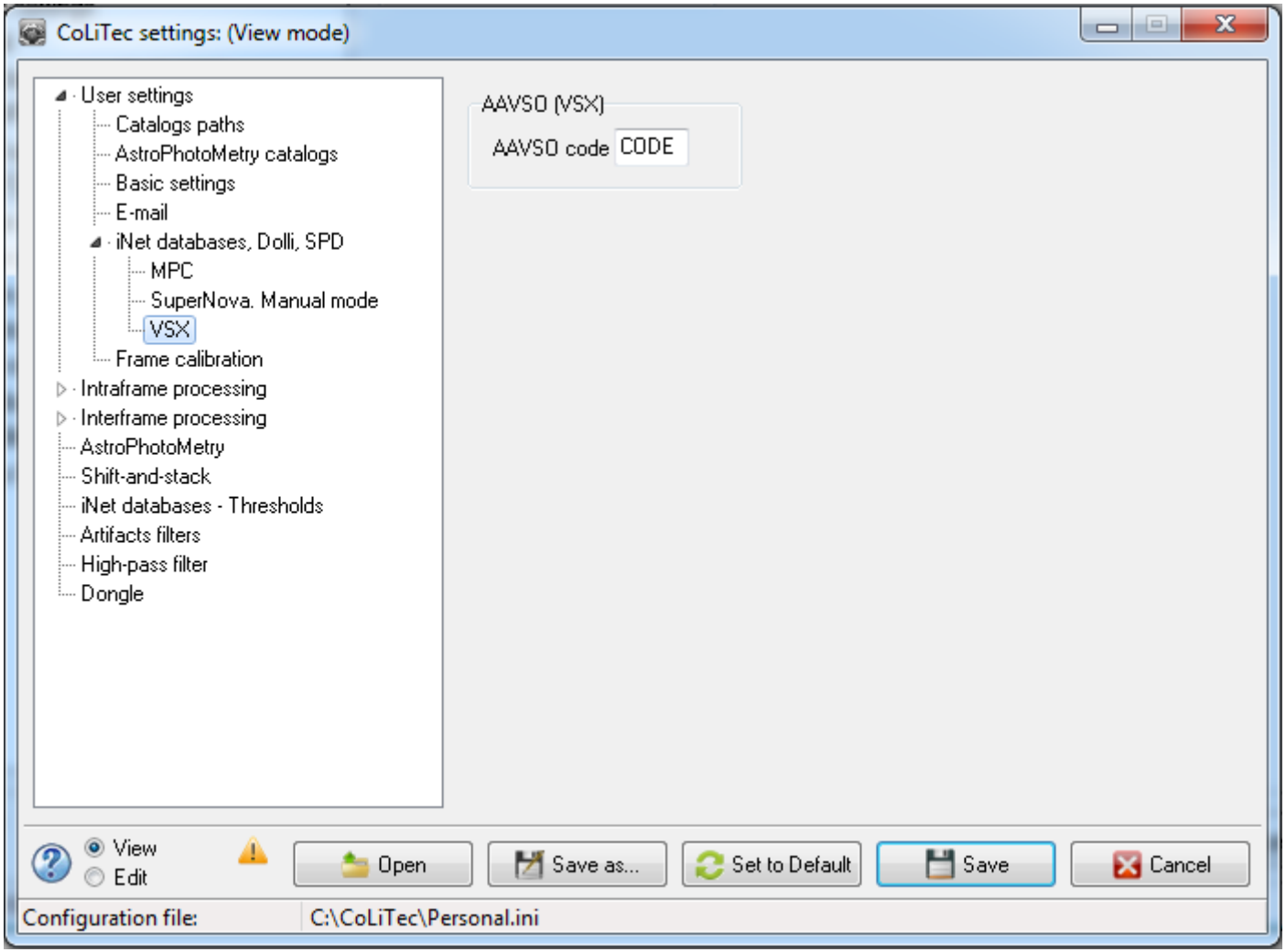

Figure 1.5.3. «**VSX**» section view

Table 1.5.3. Variables list in «**VSX**» section

№	Identifier	Parameter name	Full name	Comments	Location	Type	Adjustment range	Module, which uses
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
1	LabeledEdit50	AAVSO code	AAVSO code.	-	AAVSO (VSX)	string	-	VOCLT

1.6. Frame calibration

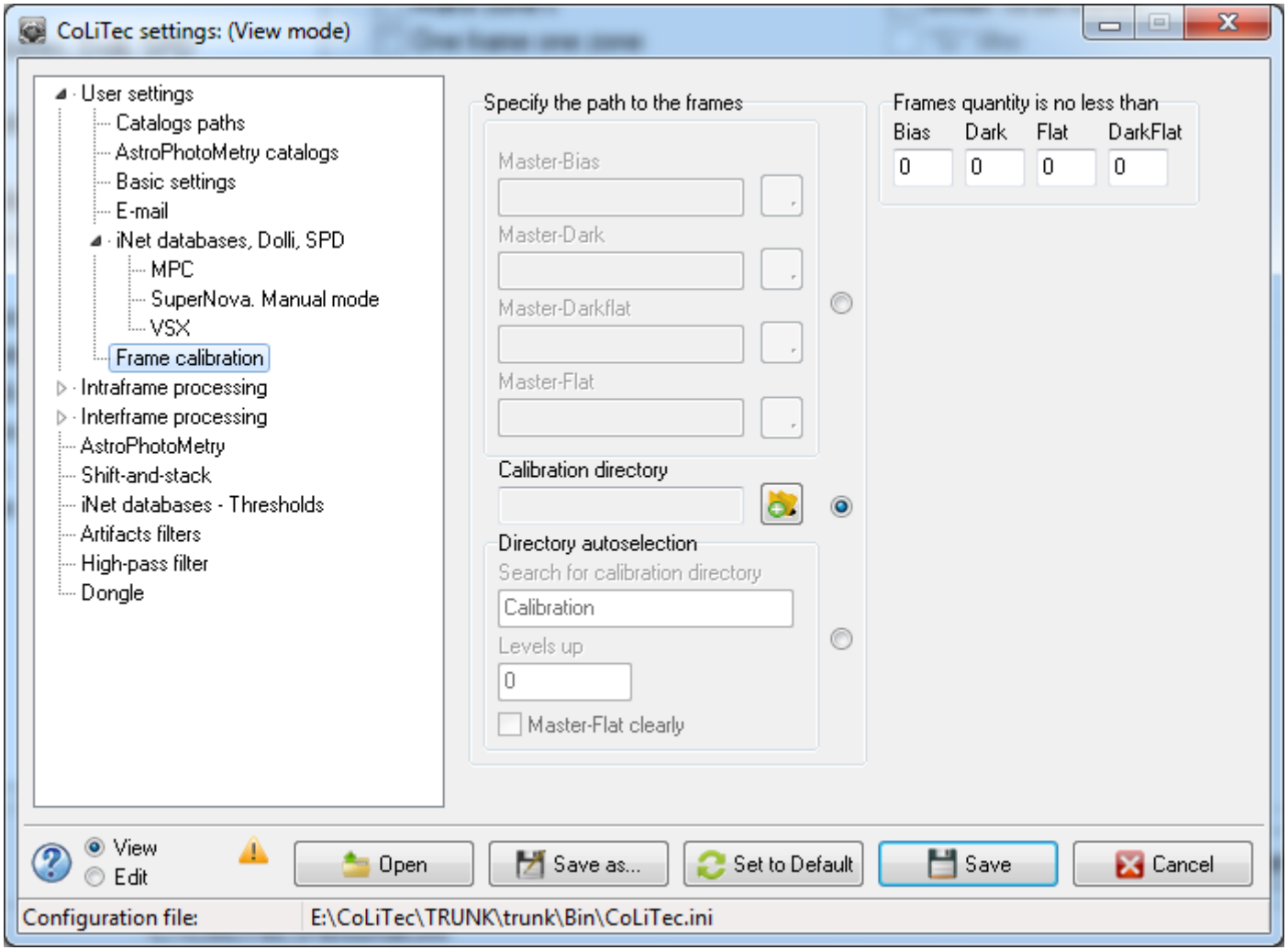

Figure 1.6. «**Frame calibration**» section view

Table 1.6. Variables list in «**Frame calibration**» section

№	Identifier	Parameter name	Full name	Comments	Location	Type	Adjustment range	Module, which uses
1	2	3	4	5	6	7	8	9
1	LabeledEdit51	Bias	Number of frames type Bias, Dark, DarkFlat, Flat, which should not be less than for the formation master frame.	Utilities frames used to form the master - Bias, Dark, DarkFlat, Flat, must be located in the folder "Calibration directory" or should be placed in the folder specified in the "Search for calibration directory".	Calibration frames' parameters / Frames quantity is no less than	int	0-50, pcs.	CosmCLT
2	LabeledEdit53	Dark				int	0-50, pcs.	CosmCLT
3	LabeledEdit56	DarkFlat				int	0-50, pcs.	CosmCLT
4	LabeledEdit55	Flat				int	0-50, pcs.	CosmCLT
5	LabeledEdit57	Master-Bias	Path to Master-Bias frame.	-	Calibration frames' parameters / Specify the path to the frames	string	-	CosmCLT
6	LabeledEdit59	Master-Dark	Path to Master-Dark frame.	-		string	-	CosmCLT
7	LabeledEdit60	Master-Dark-Flat	Path to Master-DarkFlat frame.	-		string	-	CosmCLT
8	LabeledEdit61	Master-Flat	Path to Master -Flat frame.	-		string	-	CosmCLT
9	RadioButton39	Manual	Sets manual mode to specify the path to frames.	-		bool	[true; false]	CosmCLT
10	RadioButton40	Calibration directory	Sets mode to specify the path to frames from calibration directory.	-		bool	[true; false]	CosmCLT
11	RadioButton41	Directory autoselection	Sets directory autoselection mode to specify the path to frames.	-		bool	[true; false]	CosmCLT
12	LabeledEdit62	Calibration directory	Path to calibration directory that contains the "raw" calibration frames from which the master (super-) frames are formed	Calibration directory - the directory that contains the calibration frames types Bias, Dark, DarkFlat, Flat, from which you need to generate the corresponding master (super) frames. Frames shall have an appropriate identifier (e.g., Flat) in a file name or a header field FRAMETYP.	Calibration frames' parameters	string	-	CosmCLT
13	LabeledEdit63	Search for calibration directory	Calibration directory name for search.	-	Calibration frames' parameters / Specify the path to the frames / Directory autoselection	string	-	CosmCLT
14	LabeledEdit64	Levels up	Number of upper levels of nested file system, within which the search of calibration directory is done.	-		int	0…, pcs.	CosmCLT
15	CheckBox1	Master-Flat clearly	Turns on / off Master-Flat mode clearly	Often, super-Flat, or data for it, are not created every night, and Bias and / or Dark are created. Additionally, you should identify and process the latter and super-Flat «take" from a pre-specified "place".		bool	[true; false]	CosmCLT

2. Intraframe processing

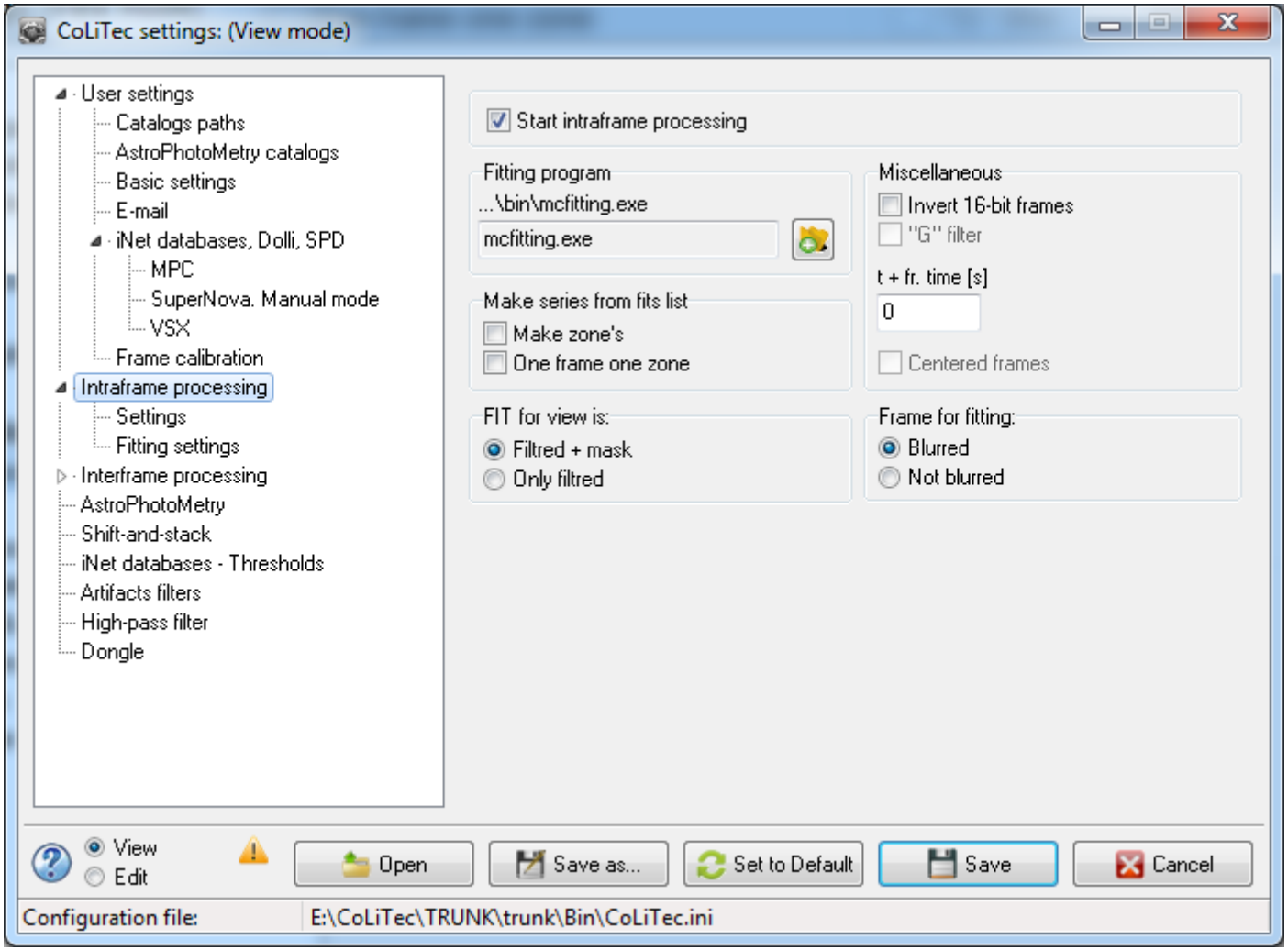

Figure 2. «**Intraframe processing**» section view

Table 2. Variables list in «**Intraframe processing**» section

№	Identifier	Parameter name	Full name	Comments	Location	Type	Adjustment range	Module, which uses
1	2	3	4	5	6	7	8	9
1	CheckBox34	Start intraframe processing	Enables / disables the launch of intraframe processing.	When deactivated, the alignment will be carried out only by image brightness.	-	bool	[true; false]	POCLT
2	LabeledEdit20	Fitting program	Contains the name of the executable fitting file *.exe.	-	Fitting program	string	Path to the fitting program	POCLT
3	CheckBox11	Make zone's	Forms zones according to the angular coordinates from headlines.	***Only used in light-version.*** All frames can be supplied to the program in the same folder. The program sorts frames, placing frames of different zones into separate folders. In other words, frames with same angular coordinates of the center will be in the same folder.	Make series from fits list	bool	[true; false]	POCLT
4	CheckBox6	One frame one zone	Forms zones as “one frame - one zone”.	1 folder (zone) – 1 frame. It is often used when refusing to use interframe processing.		bool	[true; false]	POCLT
5	RadioButton11	Filtred + mask	Frame to display will be aligned and processed by filter.	It is the matter of taste and convenience for each user individually.	FIT for view is:	bool	[true; false]	POCLT
6	RadioButton12	Only filtred	Frame to display will be only aligned.			bool	[true; false]	POCLT
7	CheckBox15	Centered frames	Enables / disables frame centering.	-	Miscellaneous	bool	[true; false]	VKCLT
8	LabeledEdit89	t + fr. time(s)	Value of extra time to frame time.	Sometimes time in the frame headline is written with a constant error - parameter is introduced to compensate it.		double	от 0.000, seconds	POCLT
9	CheckBox17	Invert 16-bit frames	Enables / disables inversion mode for 16-bit frames.	Mode is more related to processing of astro-negatives. Frame brightness inversion is performed before the initial processing.		bool	[true; false]	POCLT
10	CheckBox26	"G" filter	Enables / disables filter «G (Spirit)» (*temporary is not available*).	Experimental mode to smooth frame section, which contain post-glow from bright stars that were in this "place" in the previous frame.		bool	[true; false]	POCLT
11	RadioButton10	Blurred	Choose the blurred type of frame for fitting	-	Frame for fitting	bool	[true; false]	mcfitting

12	RadioButton14	Not blurred	Choose the not blurred type of frame for fitting	-		bool	[true; false]	mcfitting

2.1. Intraframe processing settings

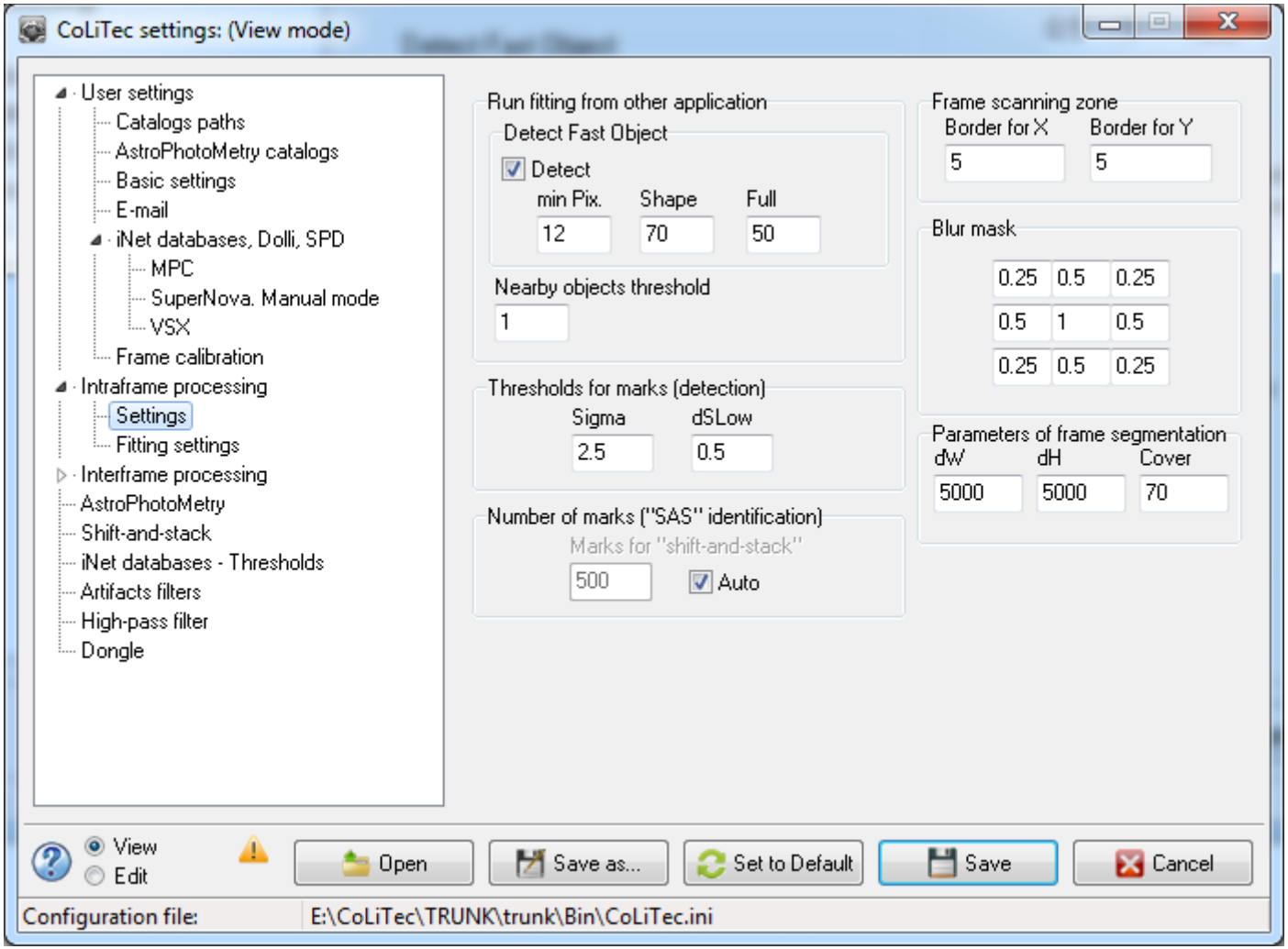

Figure 2.1. «**Intraframe processing settings**» section view

Table 2.1. Variables list in «**Intraframe processing settings**» section

№	Identifier	Parameter name	Full name	Comments	Location	Type	Adjustment range	Module, which uses
1	2	3	4	5	6	7	8	9
1	LabeledEdit11	Border for X	Indents from the edges of frame to X.	Parameters specify the size of the frame edge, which is not processed with intraframe processing.	Frame scanning zone	int	from 5, pixels	POCLT
2	LabeledEdit13	Border for Y	Indents from the edges of frame to Y.			int	from 5, pixels	POCLT
3	LabeledEdit65	dW	Value dW (delta W) – frame partition by axis X.	When processing frames of size 5000 x 5000 pixels, it is recommended to undertake segment processing, to avoid errors with the memory. This increases stability of the computational process and increases the counting time.	Parameters of frame segmentation	int	from 1000, pixels	POCLT
4	LabeledEdit66	dH	Value dH (delta H) – frame partition by axis Y.			int	from 1000, pixels	POCLT
5	LabeledEdit67	Cover	Value of overlap between frame segments.	It is recommended to choose the overlap between close segments from the frame size of the largest objects. For object detection it is necessary that at least one segment of the frame object was complete.		int	50-200, pixels	POCLT
6	LabeledEdit128	Sigma	Threshold value of object detection. Set in standard deviation of correlation responses from neighborhoods noise peaks. Standard deviation evaluation is calculated by the program automatically.	Main parameter of the intraframe processing. Selection threshold of frames peaks, close to which fitting (assessment of location and objects shine) will be held. Correlation feedback values from close noise peaks are located in the left side of the range and have a Gaussian shape. Program automatically finds its standard deviation (sigma). Correlation feedback values from the surrounding area of the peaks of the objects are located in the right part of the range as a long tail. For further processing those peaks are selected, the value of correlation response of which is more than a standard deviation (specified in parameter number of times).	Thresholds for marks (detection)	double	1.0-10.0, pixels	POCLT
7	LabeledEdit40	dSlow	The value, which lowers the threshold of markers formation (Sigma) while processing composite series for the initial frames.	Discrepancy with respect to the threshold of forming a mark on the initial frame. When processing composite series, a marks formation threshold on the super-frame corresponds to the "Sigma", and on the threshold of initial frames is equal to the «Sigma- dSlow».		double	0.0-1.0, pixels	POCLT

8	LabeledEdit121	Marks for "shift-and-stack"	Value of marks number on the initial frame, which should be used for the identification of frames to create a master-frame.	This number of the brightest frame marks will be used by the program when combining initial frames to form one master-frame.	Number of marks ("SAS" identification)	int	300-1000, pcs.	POCLT
9	CheckBox34	Auto	Enables / disables the marks auto counting mode.	If enabled - the number of used marks from frame is determined automatically, otherwise - according to the parameter «Marks for "shift-and-stack"».		bool	[true; false]	POCLT
10	LabeledEdit49	Nearby objects threshold	Threshold value for the objects adding to the group of nearby objects.	Additional value in pixels that is added to the sum of the radius of two objects. If the distance between the peaks of objects smaller than the sum of their radiuses + additional value, they are considered to be nearby.	Run fitting from other application	int	0-100, pixels	POCLT mcfitting
11	CheckBox37	Detect	Enables / disables detection fast objects mode.	-	Run fitting from other application/ Detect Fast Object	bool	[true; false]	POCLT
12	LabeledEdit3	min Pix.	Minimum pixel value in an enlarged object.	-		int	5-20, pixels	POCLT
13	LabeledEdit14	Shape	Value of the object elongation (100 – circle, 0 – ellipse).	-		int	1-100, pixels	POCLT
14	LabeledEdit31	Full	The coefficient of pixel filling for contour of an elongated object.	-		int	0-100, pixels	POCLT
15	Edit9-Edit17	1-9 textbox	The blur mask on all sides according to the central pixel.	-	Blur mask	double	0.0-1.0, pixels	POCLT

2.2. Fitting settings

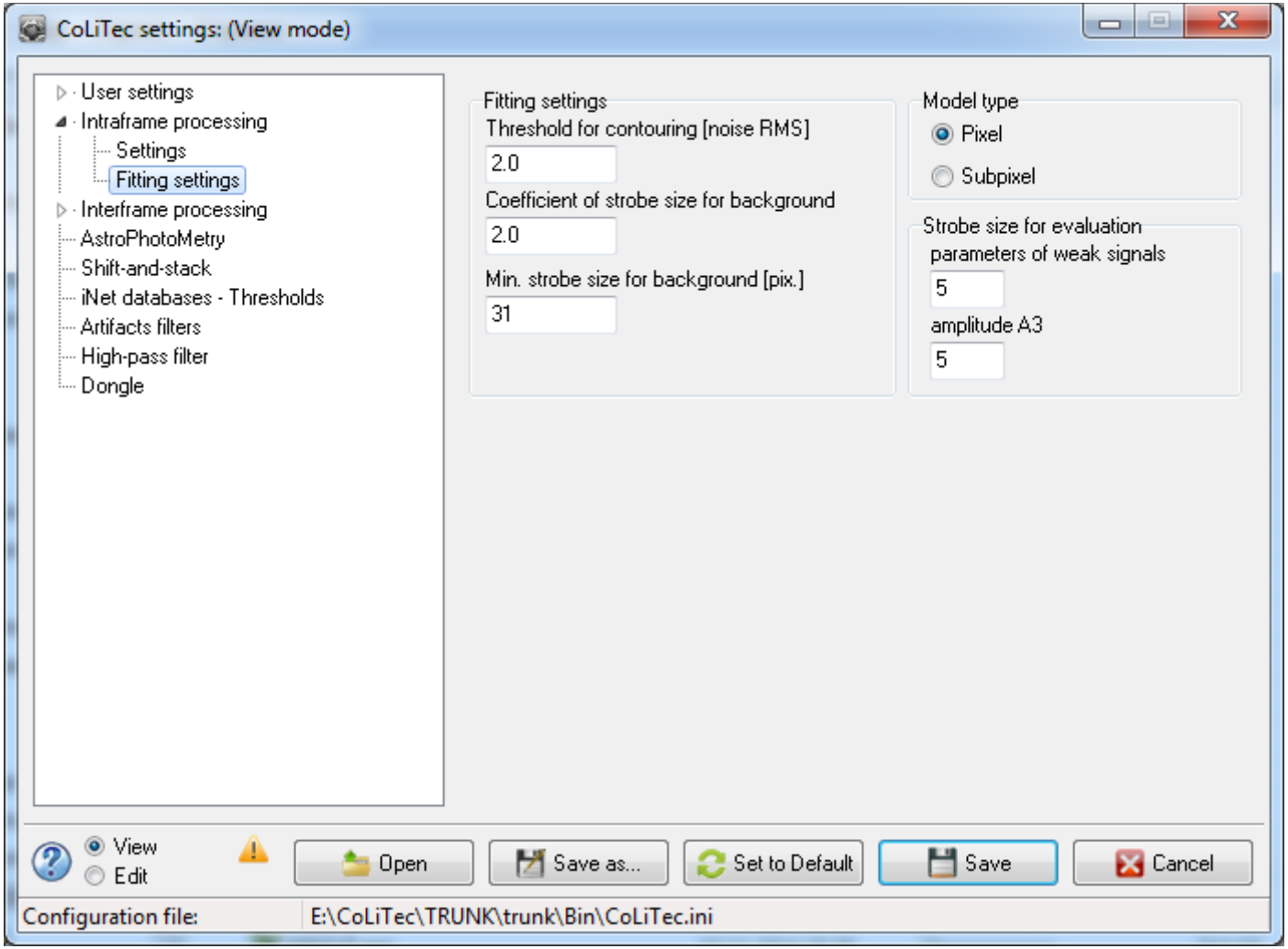

Figure 2.2. «**Fitting settings**» section view

Table 2.2. Variables list in «**Fitting settings**» section

№	Identifier	Parameter	Full name	Comments	Location	Type	Adjustmen	Module,

		name					t range	which uses
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
1	LabeledEdit58	parameters of weak signals	Minimum strobe size for evaluation parameters of weak signals.	-	Strobe size for evaluation	int	3-99 (odd), pixels	mcfitting
2	LabeledEdit69	amplitude A3	Strobe size for the amplitude A3 evaluation.	Amplitude is a sum of pixels in the strobe.		int	3-99 (odd), pixels	mcfitting
3	RadioButton34	Pixel	Sets pixel type of mathematical model for processing.	-	Model type	bool	[true; false]	mcfitting
4	RadioButton44	Subpixel	Sets subpixel type of mathematical model for processing.	-		bool	[true; false]	mcfitting
5	LabeledEdit107	Threshold for contouring [noise RMS]	Threshold for contouring of measurements.	-	Fitting settings	double	1.00-99.9, noise SKO	mcfitting
6	LabeledEdit124	Coefficient of strobe size for background	Coefficient of strobe size for the frame background.	-		double	1.00-99.9, n/d	mcfitting
7	LabeledEdit127	Min. strobe size for background [pix.]	Minimal strobe size for the frame background.	-		int	5-99, pixels	mcfitting

3. Interframe processing

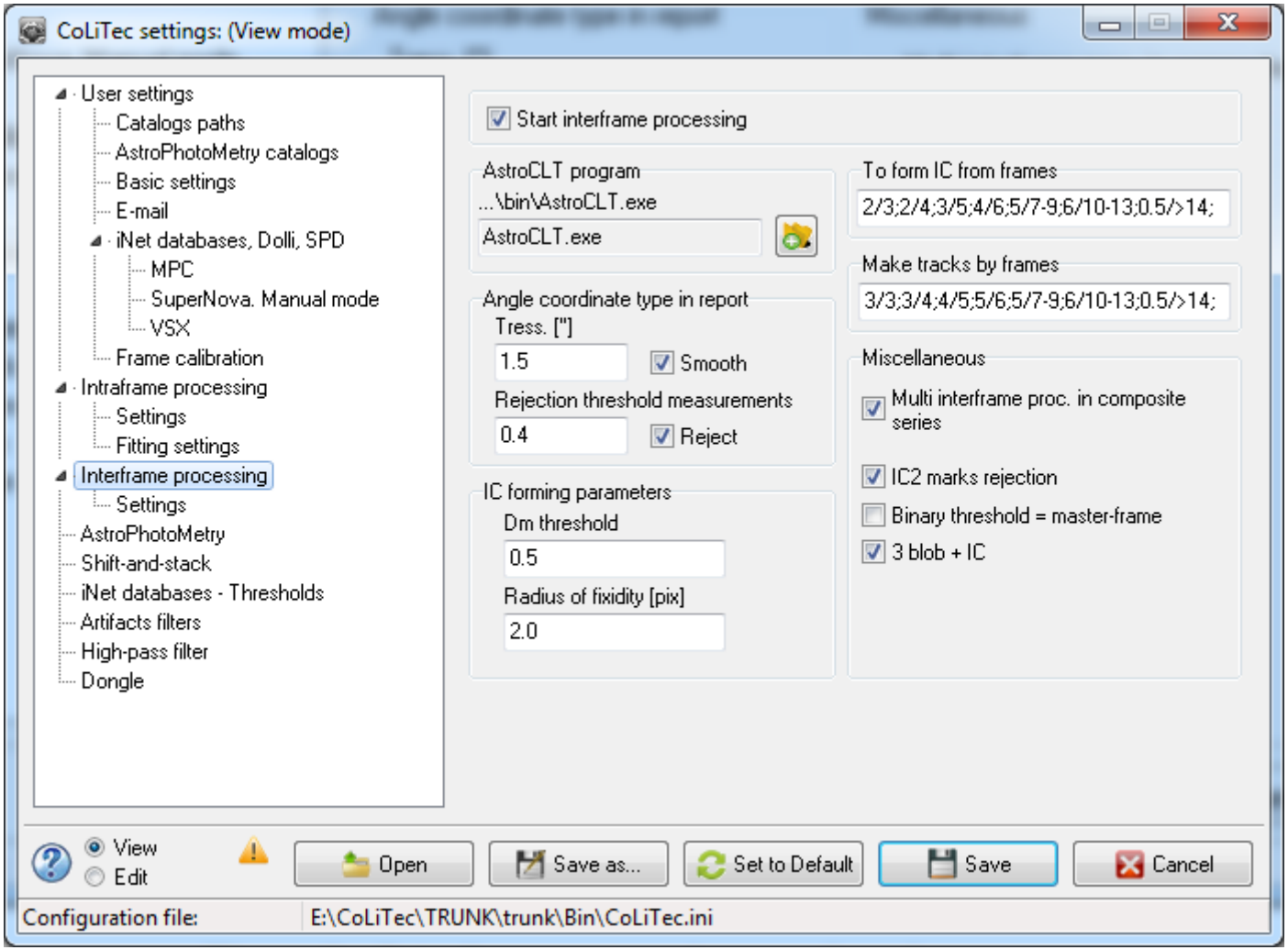

Figure 3. «**Interframe processing**» section view

Table 3. Variables list in «**Interframe processing**» section

№	Identifier	Parameter name	Full name	Comments	Location	Type	Adjustment range	Module, which uses
1	2	3	4	5	6	7	8	9
1	CheckBox18	Start interframe processing	Enables / disables the start of interframe processing.	Interframe processing – forming of objects' trajectories with zero apparent motion. If disabled, identification with astro-, photocatalogs (astro-, photoreduction) will be undertaken, IC (internal catalog of stationary objects) will be formed.	-	bool	[true; false]	CoLiTec, OLDAS
2	CheckBox12	Multi interframe proc. in composite series	Enables / disables multi interframe processing in composite series.	When processing composite series (i.e., master-frames and initial frames) the detection of trajectories both on master-frames and on initial frames will be undertaken. The same trajectories will be merged. Parameters of the trajectories on the initial frames will be converted to trajectories parameters of master-frames.	Miscellaneous	bool	[true; false]	VOCLT
3	CheckBox14	IC2 marks rejection	Enables / disables rejection of marks IC2 (Internal catalog).	Rejection of marks located near bright objects (stars).		bool	[true; false]	VOCLT
4	CheckBox29	Binary threshold = master-frame	Enables / disables the binary threshold, which is equal to master-frame (number of marks in trajectory must not be less than the number of frames).	-		bool	[true; false]	VOCLT
5	CheckBox13	3 blob + IC	Enables / disables the detection of objects in three marks on 4 frames, provided that the mark will belong to one object of internal catalog.	Can detect objects SSO even if one of the frames series SSO merged frame of the object with the frame of the star.		bool	[true; false]	VOCLT
6	CheckBox4	Smooth	Enables / disables issuance of smoothed angular coordinates in the report.	Used for wide field telescopes with poor measurement accuracy for passing MPC input control, is recommended for use only in case of urgency.	Angle coordinate type in report	bool	[true; false]	VOCLT
7	LabeledEdit42	Tress [“]	The limit value for smoothing coordinate marks in trajectory in seconds.	Smoothing of marks coordinates in trajectory up to the value set in the «**Tress [“]**» field. Thus, the sum of the thresholds for markers formation for each coordinate value will not exceed the threshold.		double	0.1-5.0, seconds	VOCLT

8	CheckBox5	Reject	Enables / disables rejection mode of anomalous measurement in trajectory.	-		bool	[true; false]	VOCLT
9	LabeledEdit36	Rejection threshold measurements	The limit value, exceeding which the measurement will be rejected.	-		double	0.1-5.0, pixels	VOCLT
10	Edit1	To form IC from frames	Rules for making decision about a stationary object on a series of frames (rule for forming objects IC of stationary objects). There may be several rules, they are split by the separator ";".	Rules for making decision about a stationary object (object IC) is determined by the number of frames, for example, using rule 2/3. A stationary object is formed if there are 2 marks in a series of 3 frames. In other words, different rules are used for a different number of frames. Rules are split by the separator «;». Number before "/" symbol in every rule is the minimum number of marks on the amount of frames (or for a given amount of frames of the range), which is determined after the "/" symbol. If there is a fractional number in a rule, the minimum amount of marks in the rule is determined by multiplying this amount by a fractional number of frames in the processed series. The amount of frames, for which the rule is used, may be stated as a range. For example: 5/7-9; - threshold is equal to five marks with the amount of frames from seven to nine; 0.5/>14; - threshold (the minimum amount of marks required to make a decision about the presence of the object) is equal to half of the frames in the series, which consists of 14 or more frames.	To form IC from frames	string	2/3;2/4;3/5;4/6;5/7-9;6/10-13;0.5/>14;	VKCLT
11	LabeledEdit76	Make tracks by frames	Rules for making decision about finding SSO (asteroids, comets).	Decision threshold of the SSO detection (asteroids, comets) is set into the executable file, and is not accessible for user.	Make tracks by frames	string	3/3;3/4;4/5;5/6;5/7-9;6/10-13;0.5/>14;	VOCLT
12	LabeledEdit25	Radius of fixidity [pix]	Radius of fixidity value in pixels.	Marks (no more than one of each frame) are recognized as belonging to one object, if they are separated from each other by no more than the radius of fixidity. When forming groups of related fixed objects, the object is included in the group if its distance to one of the objects in a group, smaller than the radius of indifference.	IC forming parameters	double	0.5-2.5, pixels	VKCLT

13	LabeledEdit52	Dm threshold	The maximum value for the residual variance of brightness estimates of IC object.	When the residual variance exceeds estimates of IC brightness to the maximum value, the object and the corresponding group of markers (no more than one on each frame) are considered "suspicious." Mark with the greatest shine of "suspicious" IC object is used to search for objects with nonzero apparent motion.		double	0.1-1.0, pixels	VKCLT
14	LabeledEdit92	AstroCLT program	Contains executable file name AstroCLT.exe.	-	AstroCLT program	string	Path to AstroCLT program	VKCLT

3.1. Interframe processing settings

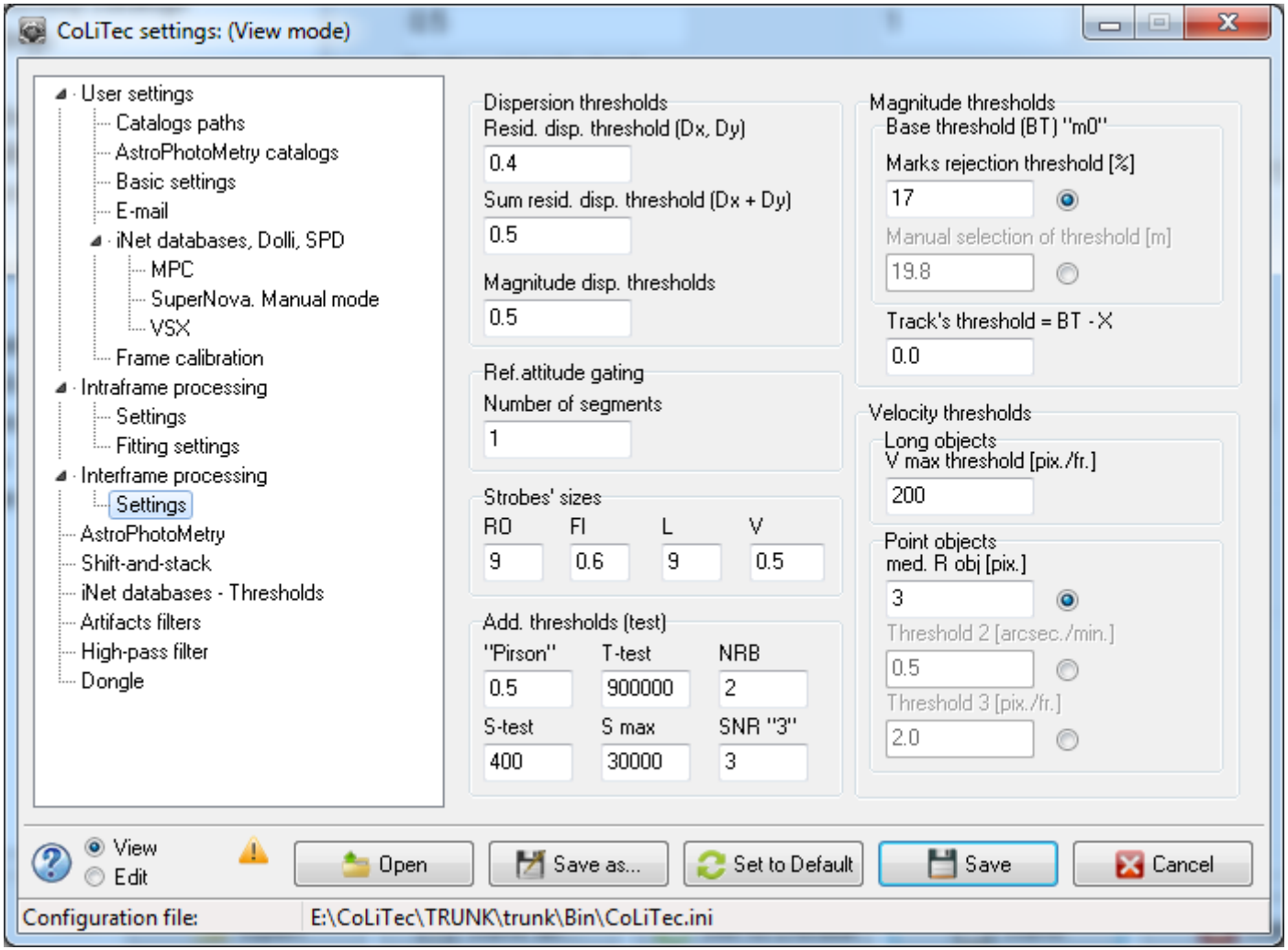

Figure 3.1. «**Interframe processing settings**» section view

Table 3.1. Variables list in «**Interframe processing settings**» section

№	Identifier	Parameter name	Full name	Comments	Location	Type	Adjustment range	Module, which uses
1	2	3	4	5	6	7	8	9
1	LabeledEdit95	RO	Strobes' sizes to traverse range.	Full range of traverse range is evenly divided into areas / gates with the same size, which is specified in this field.	Strobes' sizes	int	5-20, pixels	VOCLT
2	LabeledEdit96	FI	Step by the traverse angle.	Value of a busting step at the traverse angle. The smaller the pitch, the longer the program works. There is full coverage by areas / strobes. For a given value of object positioning errors for any possible trajectory of the apparent motion of the object there is at least one area / strobe that will get all marks of this trajectory, if they are formed [Hough article].		double	0.1-1.0, pixels	VOCLT
3	LabeledEdit97	L	Strobe size over the initial position.	Similar to 3rd paragraph of this table.		int	5-20, pixels	VOCLT
4	LabeledEdit98	V	Speed step.	Similar to 4th paragraph of this table.		double	0.1-1.0, pixels	VOCLT
5	LabeledEdit105	Number of segments	Number of segments into which each line of the frame is divided, as possible trajectory of the object apparent motion.	Data accumulation along possible trajectories of the object apparent motion is not along the whole line, but along its segment. This is advantageous if the apparent speed is low. If this parameter is equal to 1, the dividing is not performed. At the moment of the dividing mode does not work.	Ref. attitude gating	int	1-10, pcs.	VOCLT
6	LabeledEdit27	Marks rejection threshold [%]	Minimum percentage of identification of ID objects used by the program with photometric catalog. The program automatically assigns the value of the input threshold of detection procedure SSO according to assessment of mark (object) shine.	Only those markers are served to the SSO detection procedure that have not been put in the ID and shine evaluation which is not less than a preassigned threshold. The value of the threshold magnitudes is chosen adaptively. It corresponds to a given percentage of the input field IC objects identification with photometric catalog that is used by the program. The minimum shine of the last shine range is chosen for threshold value with percentage of not less than the specified identification. All IC objects are predivided into 50 bands on shine with the same amount of marks in each.	Magnitude thresholds / Base threshold (BT) "m0"	int	15-50, %	VOCLT

7	RadioButton19	Marks rejection threshold [%]	Sets the determination mode for input of SSO threshold detection procedure according to assessment of mark (object) shine as a function of the minimum percentage of identifying objects with IC with photometric catalog.	-		bool	[true; false]	VOCLT
8	LabeledEdit117	Manual selection of threshold [m]	The value of input threshold detection procedure SSO according to mark (object) shine assessment, selected manually.	-		double	15.0-20.0, pixels	VOCLT
9	RadioButton20	Manual selection of threshold [m]	Sets the manual mode for defining the input threshold detection procedure SSO according to mark (object) shine assessment.	-		bool	[true; false]	VOCLT
10	LabeledEdit87	Track's threshold = BT - X	The threshold value for the trajectory, which is equal to the difference between the basic threshold and value entered.	Brightness evaluation in one of the marks on the SSO can sag significantly. However, the average marks from the SSO have a greater brightness evaluation than noise marks, which appeared along SSO possible trajectory accidentally. The program uses, but recently it is recommended to use "0.0".	Magnitude thresholds	double	0.0-1.0, magnitude	VOCLT
11	LabeledEdit126	V max threshold [pix/fr]	The maximum velocity of the object investigation.	-	Velocity thresholds / Long objects	int	50-200, pixels / frame	VOCLT
12	RadioButton26	mid. R obj	Sets type of velocity thresholds for point objects as value of the average (typical) radius of the object frame in pixels.	-	Velocity thresholds / Point objects	bool	[true; false]	VOCLT
13	LabeledEdit45	mid. R obj [pix]	Value of the average (typical) radius of the object frame.	The parameter is set based on the size of the pixel. Parameter affects the threshold calculation for the maximum velocity of circular objects.		int	1-5, pixels	VOCLT
14	RadioButton15	Threshold 2	Sets type of velocity thresholds for point objects as Threshold 2 in arcsec./min.	-		bool	[true; false]	VOCLT
15	LabeledEdit94	Threshold 2 [arcsec./min.]	Thresholds for point objects in arcsec./min.	-		double	0.0-999.9, arcsec./min.	VOCLT
16	RadioButton16	Threshold 3	Sets type of velocity thresholds for point objects as Threshold 2 in pixels/frame.	-		bool	[true; false]	VOCLT

17	LabeledEdit104	Threshold 3 [pix./fr.]	Thresholds for point objects in pixels/frame.	-		double	0.0-999.9, pixels/frame	VOCLT
18	LabeledEdit99	Resid. disp. threshold (Dx,Dy)	The limit value for the residual dispersion	After the OLS evaluation of motion parameters (the apparent motion of the object is considered to be visible movement in a straight line at a constant speed), the residual dispersion are compared with the maximum permissible value. When it exceeds, the object is not considered to be detected.	Dispersion thresholds	double	0.3-0.7, pixels	VOCLT
19	LabeledEdit30	Sum resid. disp. threshold (Dx + Dy)	Maximum permissible value of the total residual dispersion in two coordinates.	After the OLS evaluation of motion parameters, the total residual dispersion is compared with the maximum permissible value. When it exceeds the object is not considered to be detected.		double	0.5-0.8, pixels	VOCLT
20	LabeledEdit24	Magnitude disp. thresholds	The limit dispersion value for brightness of the object.	The limit value for the dispersion of magnitude marks of the assumed object (the brightness of the object on a series of observations is assumed constant).		double	0.4-0.8, magnitude	VOCLT
21	LabeledEdit44	"Pirson"	Maximum permissible value of the Pearson criteria.	-	Add. thresholds (test)	double	0.5-0.9, n/d	VOCLT
22	LabeledEdit37	t-test	The limit value for the t-criteria.	-		int	900000, n/d	VOCLT
23	LabeledEdit39	NRB	Maximum permissible value of the amount of marks (not less) on the initial frames.	The limit value corresponds to master-mark (mark formed on the master-frame).		int	2-10, n/d	VOCLT
24	LabeledEdit41	S-test	The limit value for S-criteria.			int	300-500, n/d	VOCLT
25	LabeledEdit130	S max	The critical value of S-criterion.	When exceeding the critical value of S-criteria, the object is considered to be detected in any of its indicators.		int	30000, n/d	VOCLT
26	LabeledEdit75	SNR "3"	Threshold of Signal-to-noise ratio for marks in the trajectory.	SNR "3" calculated as the ratio of the peak brightness of marks (without frame noise value) to the standard deviation of frame noise. 0 - threshold is disable; 99 - almost nothing will be found.		int	0-99, n/d	VOCLT

4. AstroPhotoMetry

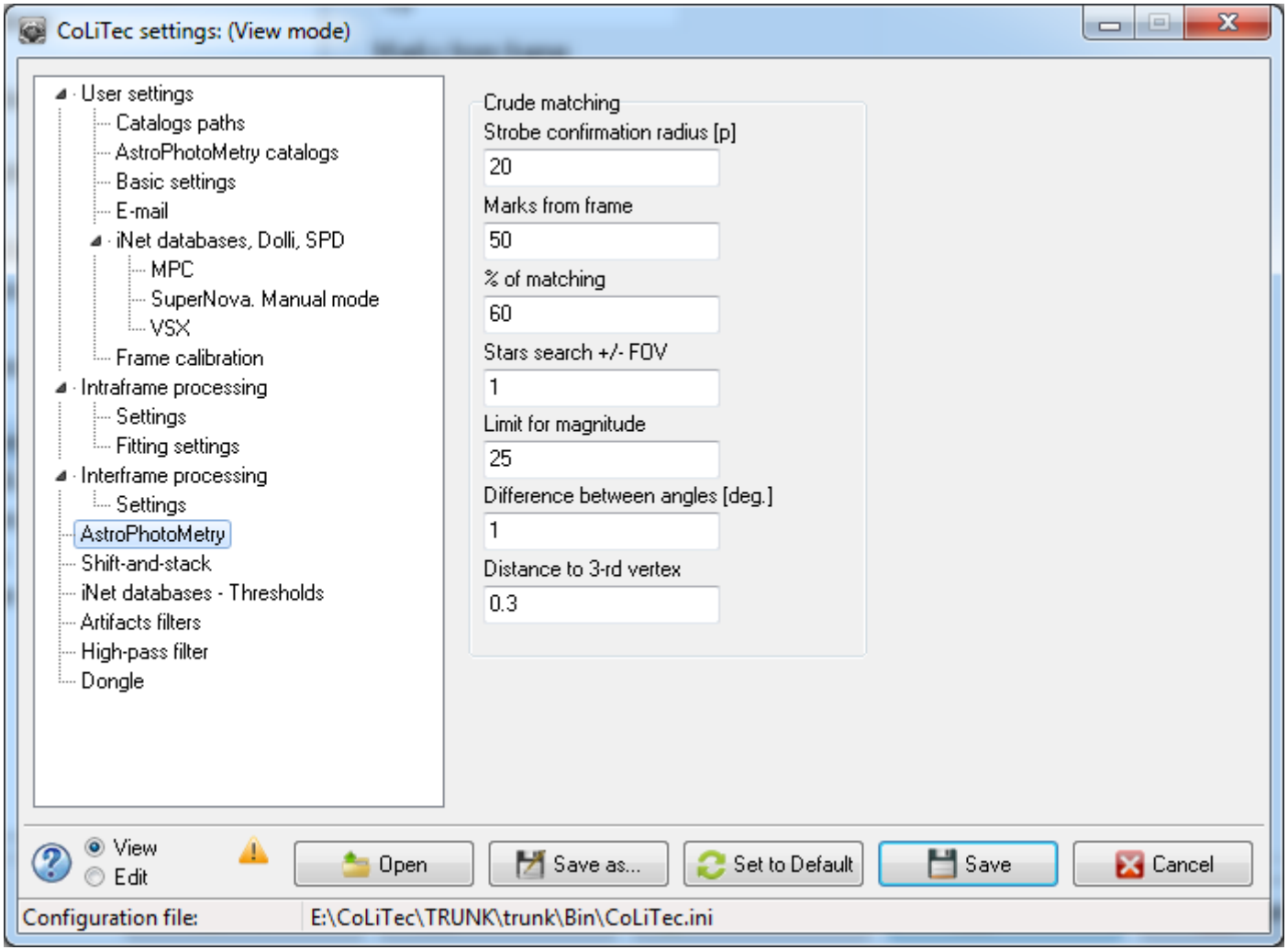

Figure 4. «**AstroPhotoMetry**» section view

Table 4. Variables list in «**AstroPhotoMetry**» section

№	Identifier	Parameter name	Full name	Comments	Location	Type	Adjustment range	Module, which uses
1	2	3	4	5	6	7	8	9
1	LabeledEdit7	Strobe confirmation radius [p]	Strobe confirmation radius for selected frame objects by catalog objects.	-	Crude matching	int	10-30, pixels	VKCLT
2	LabeledEdit71	Marks from frame	Amount of marks from the frame, selected by the program to confirm them by Astro Catalog objects within a preliminary hypothesis about the parameters of the frame shear.	During the preliminary identification of shear assessment prepared within the hypotheses about par marks (one on the frame and a catalog of the same object).		int	30-100, pcs.	VKCLT
3	LabeledEdit23	% of matching	Minimum allowable percentage of confirmations.	Amount of confirmations is used as the weight of the hypotheses. A circular area (gate) with a given radius (§ 2) is placed around each mark of the first frame introduced. Amount of evidence is the number of markers of the second frame, which were introduced in the area (gates). If the number of confirmations is above the minimum, then the frame is considered to be identified with Astro Catalog.		int	60-80, %	VKCLT
4	LabeledEdit43	Stars search +/- FOV	Choosing stars within a given catalog for emergency identification.	When there is a large error in the eyepiece (more than a third part of the field of view) sections of the star catalog , which attempts to identify the frame will be enumerated (if the parameter is greater than 0). If the parameter is 0, enumerating will not be implemented.		double	0.0-1.0, angular frame size	VKCLT
5	LabeledEdit28	Limit for magnitude	Limit value for objects shine of Photo Catalog used for identification.	Stars of Photo Catalog whose shine is above a predetermined limit are not loaded in memory.		double	15.0-25.0, magnitude	VKCLT
6	LabeledEdit86	Difference between angles [deg.]	Difference between angles of triangle in degrees.	-		int	1-180, degrees	VKCLT
7	LabeledEdit88	Distance to 3-rd vertex	Distance to 3-rd reference star for triangle forming.	-		double	0.0-9.9	VKCLT
8	RadioButton23	Linear	Sets linear model mode for astroreduction.	-	Model	bool	[true; false]	VKCLT
9	RadioButton24	Quadratic	Sets quadratic model mode for astroreduction.	-		bool	[true; false]	VKCLT

10	RadioButton25	Qubic	Sets qubic model mode for astroreduction.	-		bool	[true; false]	VKCLT

5. "Shift-and-stack"

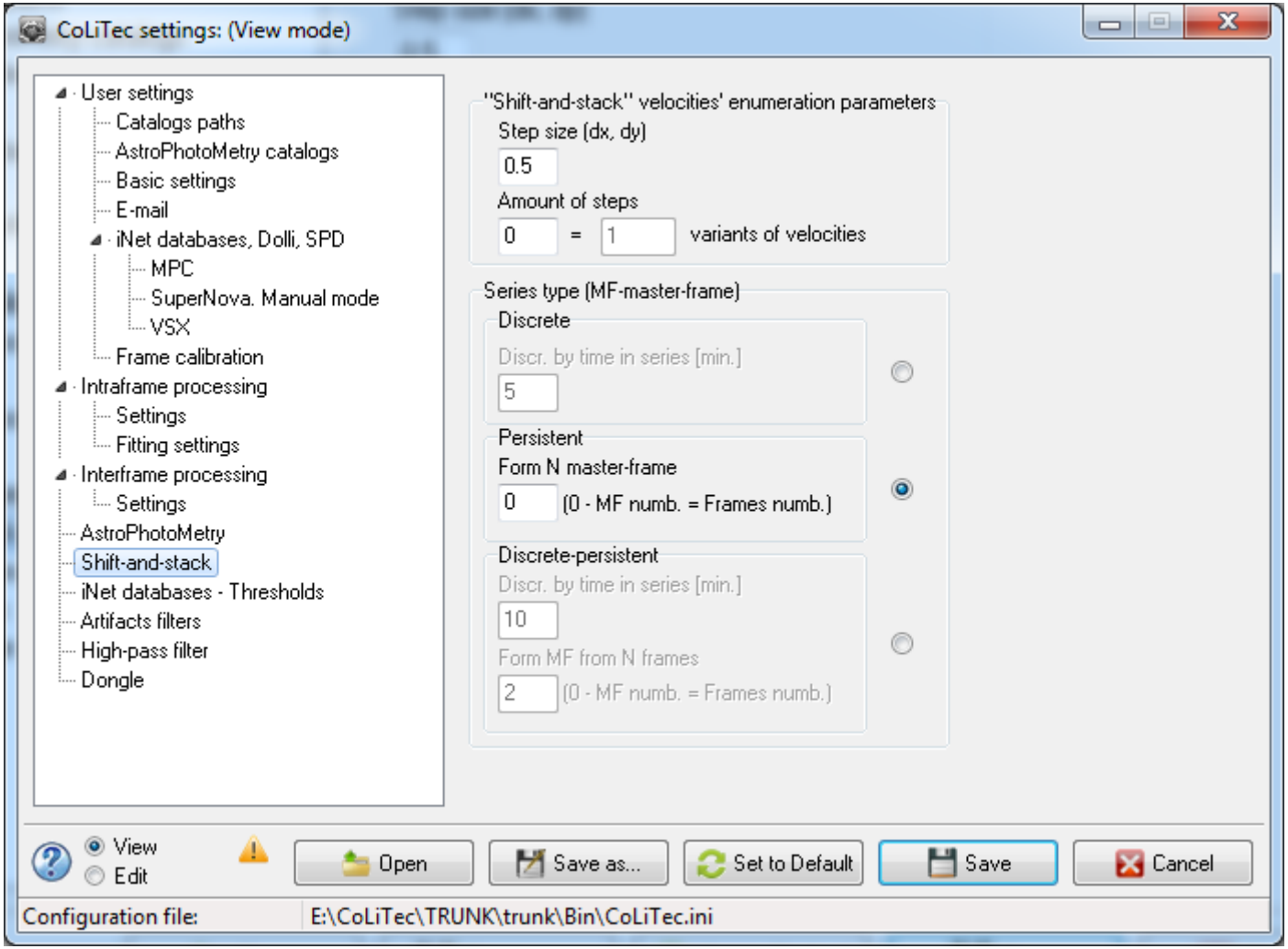

Figure 5. «**"Shift-and-stack"**» section view

Table 5. Variables list in «**"Shift-and-stack"**» section

№	Identifier	Parameter name	Full name	Comments	Location	Type	Adjustment range	Module, which uses
1	2	3	4	5	6	7	8	9
1	LabeledEdit83	Step size (dx, dy)	Step size value by X and Y.	Shift value between frames of one subseries, provided that the frames are already centered on a star.	"Shift-and-stack" velocities' enumeration parameters	int	0-100, pixels	POCLT
2	LabeledEdit68	Amount of steps	Amount of steps for “SAS”.	Amount of such shifts.		int	0-100, pcs.	POCLT
3	Edit3	variants of velocities	Variants of velocities for “SAS” (*Read only*).	Just a calculator. 1 step = 9 variants. Calculation formula: **((2 * amount of steps) + 1)^2.**		int	-	POCLT
4	LabeledEdit77	Discr. by time in series [min.]	The minimum value of the time "gap" between subseries of frames in minutes.	Adding frames (“SAS”) is only carried out in subseries. Series is divided into subseries by time dividing.	Series type (MF-master-frame) / Discrete	double	0.01-…, minutes	POCLT
5	RadioButton32	Discrete	Sets “Discrete” mode for type of “SAS” series.	-		bool	[true; false]	POCLT
6	LabeledEdit138	Form N master-frame	Value of the number of master-frames N (the number of sub-series), which will be formed.	Specifies the number of master-frames (i.e. sub-series) ("0" - the number of super frames is equal to the number of frames).	Series type (MF-master-frame) / Persistent	int	3-…, pcs.	POCLT
7	RadioButton33	Persistent	Sets “Persistent” mode for type of “SAS” series.	-		bool	[true; false]	POCLT
8	LabeledEdit47	Discr. by time in series [min.]	The minimum value of the time "gap" between subseries of frames in minutes.	Forms sub-series by the time of interruption.	Series type (MF-master-frame) / Discrete-persistent	double	0.01-…, minutes	POCLT
9	LabeledEdit48	Form MF from N frames	Value of the number of master-frames N (the number of sub-series), which will be formed.	Discontinuously continuous series - first series divides into a series of sub-time by finding the "gaps", and then splits into sub-sub-series with fewer frames. ("0" - the number of superframes equals to the number of frames).		int	3-…, pcs.	POCLT
10	RadioButton37	Discrete-persistent	Sets “Discrete-persistent” mode for type of “SAS” series.	-		bool	[true; false]	POCLT

6. iNet databases - Thresholds

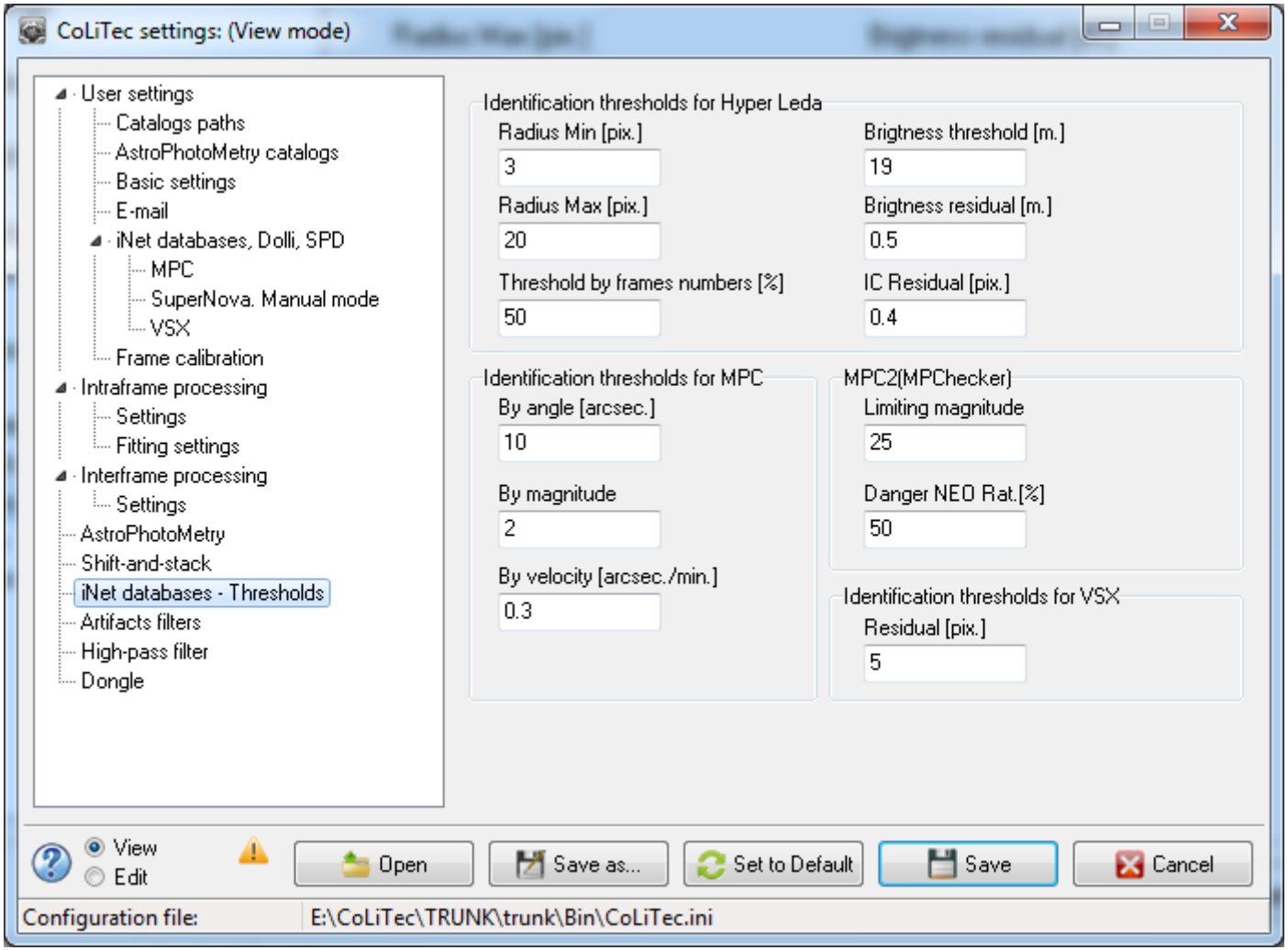

Figure 6. «iNet databases - Thresholds» section view

Table 6. Variables list in «**iNet databases - Thresholds**» section

№	Identifier	Parameter name	Full name	Comments	Location	Type	Adjustment range	Module, which uses
1	2	3	4	5	6	7	8	9
1	LabeledEdit125	Limiting magnitude	Limiting magnitude value for loaded objects from MPC catalog.	Limiting magnitude value to download objects from the MPC (via Dolly).	MPC/ MPC2 (MPChecker)	double	10.0-25.0, magnitude	VOCLT
2	LabeledEdit140	Danger NEO Rat.[%]	Danger NEO-rating in percents.	Limiting NEO-rating value for identifying this rating as dangerous.		int	0-100, %	VOCLT
3	LabeledEdit131	By angle [arcsec.]	Sets the threshold of angle for identification of objects with a MPC catalog.	Residual value of the position for identification of detected CoLiTec objects with objects from MPC.	Identification thresholds for MPC	int	1-20, arcseconds	VOCLT
4	LabeledEdit132	By magnitude	The limi value of brightness for identifying objects with a MPC catalog.	Residual value of brightness for identification of detected CoLiTec objects with objects from MPC.		double	0.1-2.0, magnitude	VOCLT
5	LabeledEdit133	By velocity [arcsec./min.]	Threshold speed value in arcseconds / minutes for identifying trajectories.	Residual value of speed for identification of detected CoLiTec objects with objects from MPC.		double	0.1-10.0, arcseconds/ minutes	VOCLT
6	LabeledEdit73	Radius Min [pix.]	Value of the minimum radius from the center of the galaxy to the candidates for a supernova in their preliminary detection.	The program prepares candidates for supernova close to galaxies from the SuperNova catalog. Candidates are selected from the internal catalog of stationary objects (IC). Candidates must be located from the galaxy center on not less than a predetermined distance.	Identification thresholds for Hyper Leda	double	3.0-5.0, pixels	VOCLT
7	LabeledEdit74	Radius Max [pix.]	Value of the maximum radius from the center of the galaxy to the candidates for a supernova in their preliminary detection.	See previous paragraph. Candidates must be located from the galaxy center on not more than a predetermined distance.		double	15.0-30.0, pixels	VOCLT
8	LabeledEdit79	Brigtness threshold [m.]	Minimum allowable brightness of the candidate for supernova.	In order for IC object to become a candidate for a supernova its brightness should exceed a predetermined distance.		int	15-20, magnitude	VOCLT

9	LabeledEdit81	Threshold by frames numbers [%]	Minimum allowable percentage (the number of frames in series) of evidences of the IC object by marks.	In order for IC object to become a candidate for a supernova, it must be confirmed by a large number of markers, not less than a specified percentage of confirmations of the total number of frames.		int	50-100, %	VOCLT
10	LabeledEdit80	Brigtness residual [m.]	Minimum allowable residual on estimated brightness of the IC and photo catalog for the candidate if it is IC object, identified with photo catalogs.	It is better if the IC object (as a candidate for the supernova) was not identified with the object from photo catalog. And if it is identified, then the IC object brigtness value must differ from such of identified object of the catalog by not less than a predetermined amount.		double	0.1-1.0, magnitude	VOCLT
11	LabeledEdit120	IC Residual [pix.]	The minimum allowable value of the IC residual for each coordinate for identified IC object.	See previous paragraph. If the candidate for a supernova is identified with photo catalog object, then the IC object's coordinates should be different from coordinates of identified IC object of not less than a predetermined amount.		double	0.1-2.0, pixels	VOCLT
12	LabeledEdit78	Residual [pix.]	Residual value in pixels.	IC object will be identified with the VSX object, if the residual value of the position will be less than specified.	Identification thresholds for VSX	double	3.0-7.0, pixels	VOCLT

7. Artifacts filters

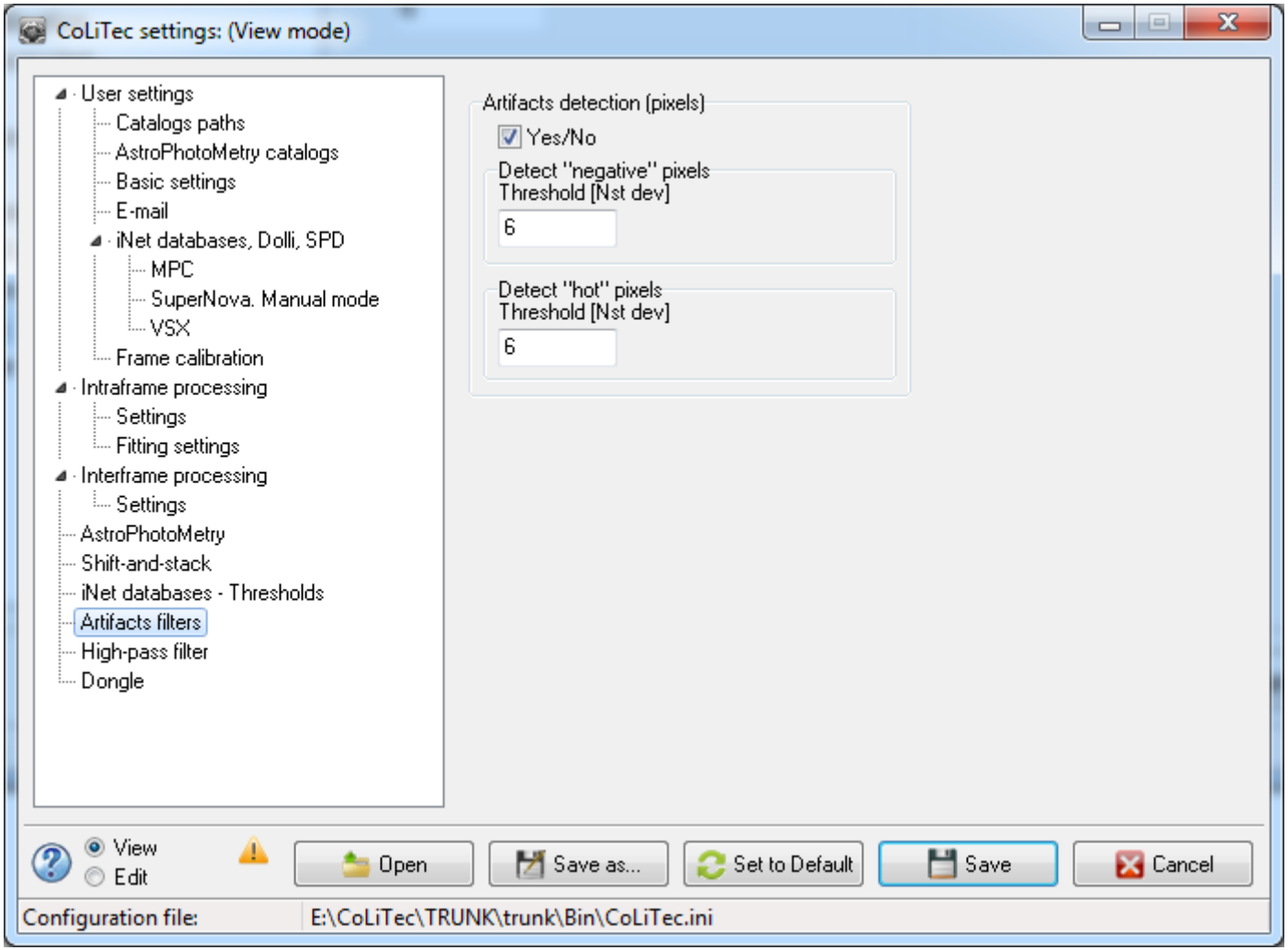

Figure 7. «**Artifacts filters**» section view

Table 7. Variables list in «**Artifacts filters**» section

№	Identifier	Parameter name	Full name	Comments	Location	Type	Adjustment range	Module, which uses
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
1	CheckBox25	Yes/No	Turns on / off artifacts detection (pixels).	-	Artifacts detection (pixels)	bool	[true; false]	CoLiTec
2	LabeledEdit1	Threshold [Nst dev]	Limit, exceeding which "negative / broken» pixels will be detected.	Detection threshold of "negative / broken" pixel is: **medium_frame_ background – (N * stdev_frame_background).**		double	2.0-10.0, n/d	CosmCLT
3	LabeledEdit100	Threshold [Nst dev]	Limit, exceeding which "hot / broken» pixels will be detected.	Detection threshold of "hot / broken" pixel is: **medium_frame_ background + (N * stdev_frame_background).**		double	2.0-10.0, n/d	CosmCLT

8. High-pass filter

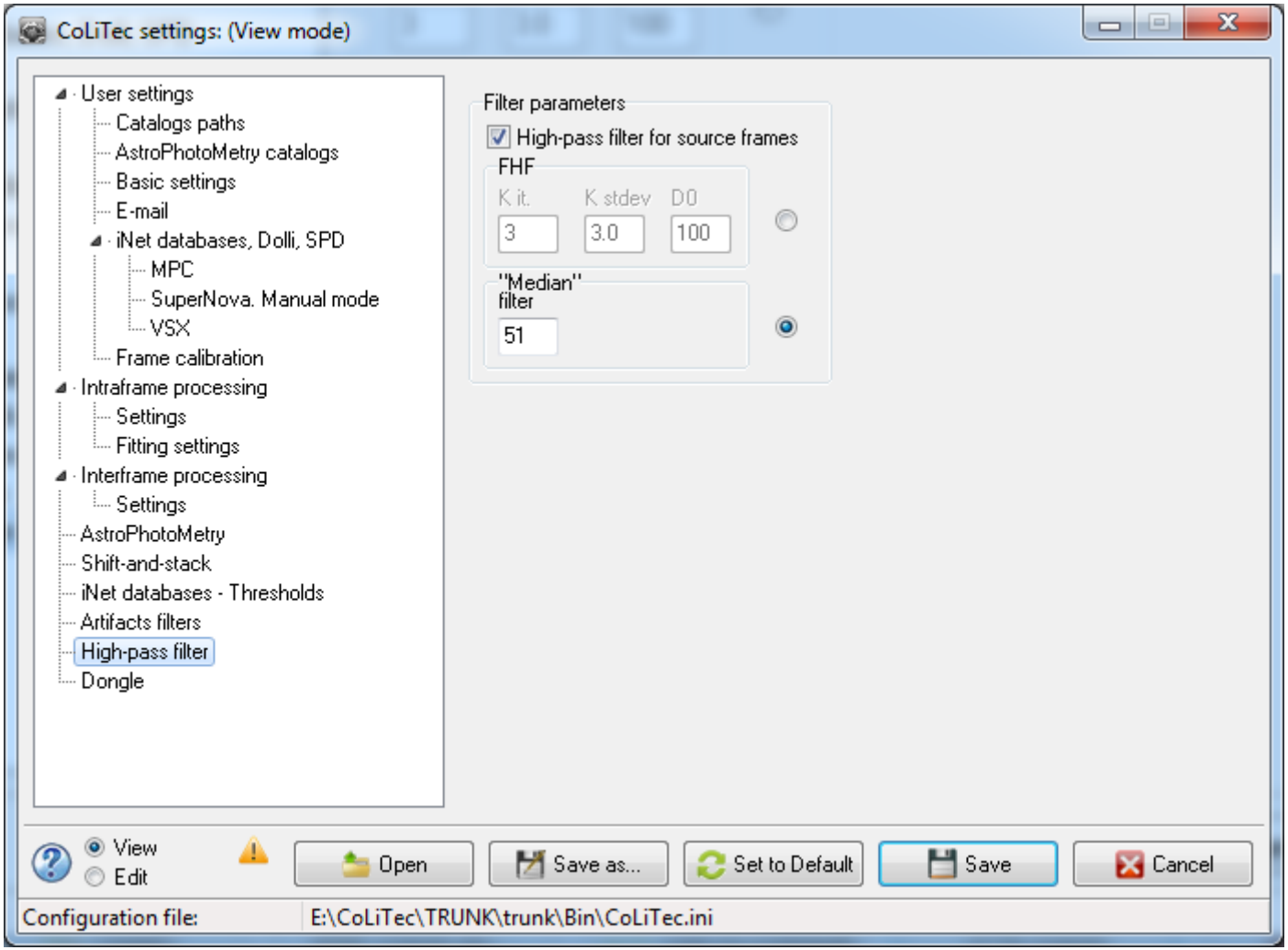

Figure 8. «**High-pass filter**» section view

Table 8. Variables list in «**High-pass filter**» section

№	Identifier	Parameter name	Full name	Comments	Location	Type	Adjustment range	Module, which uses
1	2	3	4	5	6	7	8	9
1	CheckBox2	High-pass filter for source frames	Turns on / off high-pass filter for source frames.	Alignment of the low frequency frame component.	Filter parameters	bool	[true; false]	CoLiTec, OLDAS
2	LabeledEdit21	K it.	The iterations coefficient for the “Fourier” filter.	Amount of iterations of the filter - reduces drawdown of bright objects in the frame.	Filter parameters / FHF	int	2-4	CoLiTec, OLDAS
3	LabeledEdit22	K stdev	The coefficient of the standard deviation for the “Fourier” filter.	Cutoff threshold of objects in the frame is: **medium_frame_ background + (K_{stdev} * stdev _frame_ background).**		double	1.0-5.0	CoLiTec, OLDAS
4	LabeledEdit26	D0	Window size value for the “Fourier” filter.	Radius of the filter impulse characteristic.		int	50-200, pixels	CoLiTec, OLDAS
5	RadioButton50	FHF	Sets “Fourier” filter.	-		bool	[true; false]	CoLiTec, OLDAS
6	LabeledEdit148	«Median» filter	Window size value for the “Median” filter.	-	Filter parameters / «Median» filter	int	50-200, pixels	CoLiTec, OLDAS
7	RadioButton55	«Median» filter	Sets “Median” filter.	-		bool	[true; false]	CoLiTec, OLDAS

9. Dongle

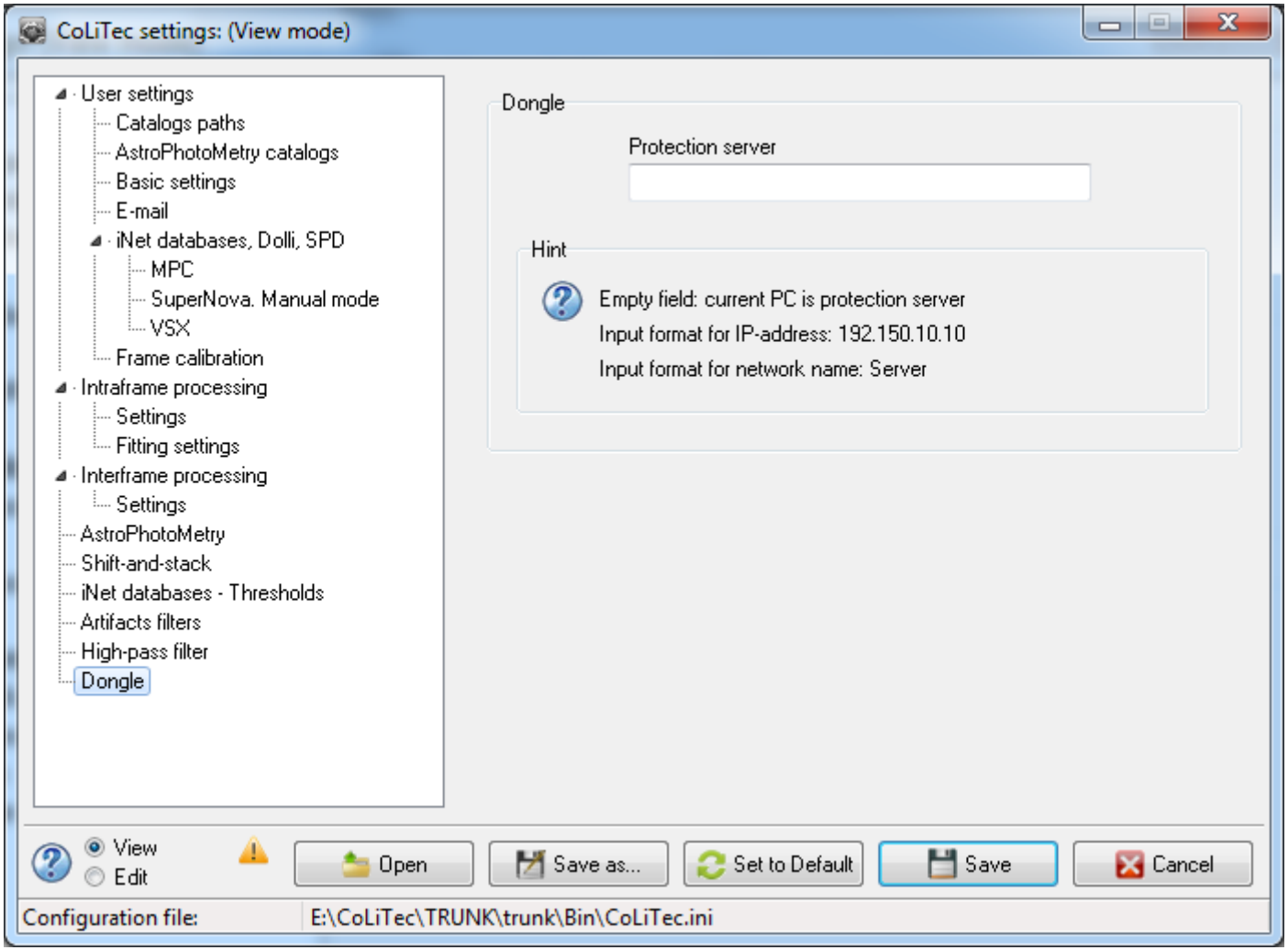

Figure 9. «**Dongle**» section view

Table 9. Variables list in «**Dongle**» section

№	Identifier	Parameter name	Full name	Comments	Location	Type	Adjustment range	Module, which uses
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
1	LabeledEdit46	Protection server	Protection server input value.	There are two types of protection server input value: IP-address and PC network name. It is necessary to type in the field if the dongle is present in the remote PC.	Dongle	string	-	OLDAS.exe