4.3 Details of the *ObsHistory* File

Table 1: Data File Field Descriptions

No.	Name	Type	Units	Description
1	obsHistID	int	none	Unique visit identifier
2	sessionID	int	none	Session identifier (run of simulator)
3	propID	int	none	Proposal identifier (different for every run)
4	fieldID	int	none	Field identifier (unique for each RA/Dec)
5	filter	char	none	Filter used at this visit (ugrizy)
6	seqnNum	int	none	Sequence identifier(within proposal sequences)
7	subseq	varchar	none	Proposal name
8	pairNum	int	none	Count of the pairs in a subsequence of a WLTSS proposal[1]
9	expDate	int	sec	Time relative to 0 sec at start of OpSim run
10	expMJD	double	MJD	Date & Time of visit (MJD of visit)
11	expTime	float	sec	Visit duration (includes shutter and readout time)
12	slewTime	float	sec	The time between the end of the second exposure in a visit and the beginning of the next exposure[2]
13	slewDist	float	radians	Distance on the sky between current field center and the field center of the previous visit[3]
14	rotSkyPos	float	radians	Rotator position on sky
15	rotTelPos	float	radians	Rotator position on telescope
16	fldVisits	int	count	Number of visits to expDate
17	fldInt	int	sec	Time interval since this field was last visited
18	fldFltrInt	int	sec	Time interval since this field was last visited using this filter
19	propRank	float	rank	Target rank within proposal
20	finRank	float	rank	Target rank among all proposals
21	maxSeeing	float	arcsec	Maximum acceptable seeing in the current filter for the current proposal
22	rawSeeing	float	arcsec	The input seeing from the Climate Model; i.e. the seeing at zenith and at 500 nm

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[1] For a subsequence in a proposal of type WLTSS (e.g. UniversalProp.conf), this value specifies how many pairs (defined as two visits separated in time, Δt, where $15 < \Delta t < 60$ minutes) have been collected in a particular filter.

[2] Note this is a bit of a misnomer as it includes filter change time if the filter is changed as well as other inter-visit and slew activities.

[3] This value is not currently used in the simulator

No.	Name	Type	Units	Description
23	seeing	float	arcsec	Seeing adjusted to filter and airmass[4]
24	xparency	float	range [0:1]	Cloud transparency, $0 =$photometric, $0 - -1 =$spectroscopic, $1 =$opaque
25	cldSeeing	float	arcsec	Seeing adjusted by transparency (currently $= 0$)[5]
26	airmass	float	none	Airmass
27	VskyBright	float	mag/arcsec^2	Sky brightness adjusted by moon presence (in the V filter)
28	filtsky	float	mag/arcsec^2	Sky brightness in V filter, VskyBright, adjusted to current filter (OpSim Team's method)[5]
29	fieldRA	float	radians	Field Right Ascension
30	fieldDec	float	radians	Field Declination
31	lst	float	radians	Local Sidereal Time
32	altitude	float	radians	Field altitude wrt telescope
33	azimuth	float	radians	Field azimuth wrt telescope
34	dist2Moon	float	radians	Distance from field to Moon
35	moonRA	float	radians	Moon Right Ascension
36	moonDec	float	radians	Moon Declination
37	moonAlt	float	radians	Moon altitude wrt telescope
38	moonPhase	float	range [0-100]	Percent illumination of the Moon ($0 =$new, $100 =$full)
39	sunAlt	float	radians	Altitude of sun
40	sunAz	float	radians	Azimuth of sun
41	phaseAngle	float		Parameter used in V sky brightness transformation[6]
42	rScatter	double		Parameter used in V sky brightness transformation
43	mieScatter	float		Parameter used in V sky brightness transformation
44	moonIllum	float		Parameter used in V sky brightness transformation
45	moonBright	float		Parameter used in V sky brightness transformation
46	darkBright	float		Parameter used in V sky brightness transformation
47	5sigma	float	mag/arcsec^2	5σ limiting magnitude for this visit using filtsky
48	perry_skybrightness	float	mag/arcsec^2	Calculation of the sky brightness in the current filter using the LSST ETC method[7]

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[4]The seeing (rawSeeing) adjusted from 500 nm to the wavelength of the current filter and to the airmass of the visit. The wavelength correction goes as $(0.5/\lambda)^{0.2}$ (λ in nm), and airmass goes as $\chi^{0.6}$.

[5]This feature is not yet implemented, but it allows for adjustment to the seeing due to observing through clouds.

[6]Fields numbered 41 to 46 are parameters used in the Krisciunas and Schaefer method for transforming V sky brightness, VskyBright, to a sky brightness in the current filter, filtsky (see PASP 103:1033, 1991).

[7]For more details see http://dls.physics.ucdavis.edu/etc/

No.	Name	Type	Units	Description
49	5sigma_ps	float	mag/arcsec^2	5σ limiting magnitude for this visit using perry_skybrightness