Mapping CatSim quantities to DIASource and DIAObject schemas

DIASource schema

DIASource column	CatSim/OpSim column	CatSim or OpSim
diaSourceId	some combination of uniqueID and obsHistID	both
ccdVisitId	can be calculated from chipNameFromRaDec() and obsHistID	CatSim
ssObjectId	ssmid (in solar system object tables)	CatSim
parentSourceId	uniqueID	CatSim
midPointTai	expMJD (need to check whether this is the beginning or the middle of the exposure	OpSim
filterName	filter	OpSim
radec	raICRS, decICRS (cannot use raJ2000, decJ2000 if you want to account for proper motion)	CatSim
radecCov	None	
xy	pixelCoordsFromRaDec()	CatSim
xyCov	None	
apFlux	methods in sims_photUtils can calculate flux (remember to subtract off mean flux of the source)	CatSim
apFluxErr	methods in sims_photUtils can calculate flux uncertainties given m5 (from OpSim)	CatSim
SNR	methods in sims_photUtils can calculate signal to noise given m5 (from OpSim)	CatSim
psFlux	treat same as apFlux	CatSim
psFluxSigma	might be able to calculate analogously to apFluxErr	CatSim
psRadec	treat same as radec	CatSim
psCov	None	
psLnL	None	
psChi2	None	
psNdata	None (could probably calculate something from a PSF model, if needed)	
trailFlux	treat same as apFlux	CatSim
trailRadec	treat same as radec	CatSim
trailLength	None	
trailAngle	None	
trailCov	None	
trailLnL	None	
trailChi2	None	
trailNdata	None	
dipMeanFlux	treat same as apFlux	CatSim
dipFluxDiff	None	
dipRadec	treat same as radec	CatSim
dipLength	None	
dipAngle	None	

dipCov	None	
dipLnL	None	
dipChi2	None	
dipNdata	None	
totFlux	treat same as apFlux, but do not subtract off mean	CatSim
totFluxErr	treat same as apFluxErr	CatSim
diffFlux	can be calculated from sims_photUtils	CatSim
diffFluxErr	can be calculated from sims_photUtils	CatSim
fpBkgd	can be calculated from sims_photUtils	CatSim
fpBkgdErr	can be calculated from sims_photUtils	CatSim
Ixx	None	
Iyy	None	
Icov	None	
IxxPSF	None (but could probably cook something up from a PSF model)	
IyyPSF	None	
IxyPSF	None	
extendendess	Could probably read directly from CatSim object type	CatSim
spuriousness	Could probably do something with SNR to get this	CatSim
flags	None	

DIAObject schema

DIAObject column	CatSim/OpSim column	CatSim or OpSim
diaObjectID	uniqueID	CatSim
radec	raICRS, decICRS (raJ2000 and decJ2000 do not account for proper motion)	CatSim
radecCov	None	
radecTai	expMJD	OpSim
pm	properMotionRA, properMotionDec	CatSim
parallax	parallax	CatSim
pmParallaxCov	None	
pmParallaxLnL	None	
pmParallaxChi2	None	
pmParallaxNdata	None	
psFluxMean	can calculate with sims_photUtils	CatSim
psFluxMeanErr	can calculate with sims_photUtils given m5 (OpSim)	CatSim
psFluxSigma	can (probably) calculate with sims_photUtils from multiple observations of the same source	CatSim
psFluxChi2	can (probably) calculate with sims_photUtils from multiple observations of the same source	CatSim
psFluxNdata	number of observations of the same source	OpSim
fpFluxMean	treat like psFluxMean	CatSim

fpFluxMeanErr	treat like psFluxMeanErr	CatSim
fpFluxMeanSigma	treat like psFluxMeanSigma	CatSim
lcPeriodic	can extract with third party packages (i.e. gatspy), if we desire	third party
lcNonPeriodic	can extract with third party packages (i.e. gatspy), if we desire	third party
nearbyObj	search CatSim tables	CatSim
nearbyObjDist	search CatSim tables	CatSim
nearbyObjLnP	None	
flags	None	

SSObject schema

SSObject column	CatSim/OpSim column	CatSim or OpSim
ssObjectId	ssmid	CatSim
oe	not stored in CatSim, but can probably be dug up from our original data	external
oeCov	None	
arc	dates observed by OpSim ?	OpSim
orbFitLnL	None	
orbFitChi2	None	
orbFitNdata	None	
MOID	None	
moidLon	None	
H	calculate from asteroid magnitude parameters	CatSim
G1	calculate from asteroid magnitude parameters	CatSim
G2	calculate from asteroid magnitude parameters	CatSim
hErr	might be able to calculate from sims_photUtils	CatSim
g1Err	should be easy to calculate	new method
g2Err	should be easy to calculate	new method
flags	None	