ORIGINS TECHNOLOGY SUMMARY

REQUIRED CAPABILITY		PERFORMANCE GOALS					TECHNOLOGY OPTIONS			
DESCRIPTION	PRIORITY	METRICS	UNITS	SIM	NGST	PF	DESCRIPTION	SOA	LIMIT	DEMO?
Visible Detector Arrays	High	•High-speed, low-noise CCD					**Improved Si CCD (0)**			
(NGST may use only near-IR arrays)		QE	%	>80	>80?		QE	>80		
		Read Noise	e-	<5	3		Read Noise	3		
		Dark Current	e-/sec	0.1	0.01		Dark Current	0.01		
		Operating Temp	K	~300	30		Operating Temp	~120-300		
		Format	nxm	128 x 128 or 256x256	2k or 4k		Format	2 k x 2 k		
							Pixel Size	~12		
		Pixel Size	um	<30	15		Frame Rate	~0.1		
		Frame Rate	Hz	1000	30					
							Improved Active Pixel Sensor (I)			
		•APD for SIM					QE	60		
		rad-tolerance	rad	TBD			Read Noise	80		
							Dark Current	?		
							Operating Temp	40		
							Format	256 x 256		
							Pixel Size	15		
							Frame Rate	15		
							APD (SIM) (0)			
							QE	60		
							Read Noise	n/a		
							Dark Current	2 to 3		
							Operating Temp	220		
							Format	1		
							Pixel Size	100		
							Si p-i-n Array (I)			
							QE	85 - 90		
							Read Noise	30 - 50		
							Dark Current	650 @ 300K		
							Operating Temp	10K --> 300K		
							Format	512X512		
							Pixel Size	25		

Visible Light Detectors and Focal Plane Arrays