UPN632 FY99 SPREADSHEET by the "Old" WBS 1-29-99 MDM

Note: UPN632 will be managed in FY99 by the new Thrust WBS,
however for FY99 only, we must distribute funds by the old WBS.

632-10 Spacecraft Subsystems

Optical Data Systems	ARC	Maki	525
Devices & Nanotechnology	ARC	Maiyopan	1191
Infusion	ARC	Olnyck	300
Modeling	ARC	Olnyck	650
Device & Process Modeling	ARC	Olnyck	650
Design & Simulation Tools	LaRC	Housner	1,040
& Data Processor with	LaRC	Moore	200
functional Structural	LaRC	Moore	610
Breakthrough Materials	LaRC	Moore	420
Structures	LaRC	Moore	850
Geometry Control	LaRC	Moore	600
Power Generation	LeRC	Labus	2,420
Energy Storage	LeRC	Labus	2,640
Electrical Systems	LeRC	Labus	1,860
NASA Aerospace Battery	LeRC	Labus	1,500
Centers for Space Power	LeRC	Labus	2,075
Thermal Management	LeRC	Labus	110
Electric Propulsion	LeRC	Dunning	3,571
Chemical Propulsion	LeRC	Dunning	1,000
NSTAR	LeRC	Labus	200
Thermal Management	GSFC	Swanson	160
Ultra Low Power/UNM	GSFC	Leurs	140
Rad Hard FPGA	GSFC	Leurs	300
Processor	GSFC	Leurs	200
Compression	GSFC	Leurs	325
(UNM Part of Earmark) -	GSFC	Leurs	1100
Applications	GSFC	Leurs	175
Design/Simulation Tools	GSFC	Azzolini	180
Formation Flying Testbed	GSFC	Leurs	411
Multi-Functional GPS	GSFC	Leurs	340
Mag Reaction Wheel	GSFC	Leurs	50
Advanced Star Sensors	GSFC	Leurs	225
Microgyro	GSFC	Leurs	50
Effects, Charged	MSFC	Pearson	980
Effects, Neutral Environment	MSFC	Pearson	980
Testbed/STRV I c/d -	MSFC	Pearson	150
Space Solar Power earmark	MSFC	Brantley	5000
AMTEC	JPL	Bankston	125
NSTAR	JPL	Stocky	1,000

Computing	JPL	Klein	325
Data Handling & Storage	JPL	Klein	350
Control	JPL	Hadaegh	723
Structures	JPL	Chmielewski	1,460
User Interface	JPL	Peterson	460
Collaborative Infrastructure	JPL	Peterson	640
Design/Simulation Tools	JPL	Peterson	730
		Subtotal	**38,991**
	ARC		3,316
	GSFC		3656
	LARC		3,720
	LERC		15,376
	MSFC		7,110
	JPL		5,813
	632-10		38,991

632-20 Sensors and Instruments

Systems	ARC	McCreight	75
tube, adv HEDS)	ARC	Kittel	320
Lidar	GSFC	Schwemmer	135
Thin Foil Mirrors	GSFC	Petre	75
Si Carbide for UV	GSFC	Keski-Kuha	50
Freq. Selective Bolometer	GSFC	Silverberg	150
InGaAs)	GSFC	Shu	550
for Strip Det	GSFC	Gehrels	375
Detector	GSFC	Shu	115
Hard X-Ray Detectors	GSFC	Tueller	100
Sounder	GSFC	Jennings	330
Rad. (STAR)	GSFC	ONeill	180
Wide FOV Spectrometer	GSFC	Tucker	230
Hyperspectral Imager	GSFC	Shu	50
Laser Transmitter	GSFC	Kraniak	275
High-eff Pulsed Laser	GSFC	Bufton	175
turboBrayton)	GSFC	Castles	1861
(Microspacecraft Testbed)	JPL	Sarohia	980
MEMS Technology	JPL	Tang	1199
Technology	JPL	Javadi	500
GPS-on-a-Chip	JPL	Meehan	250
Deformable Mirror	JPL	Trauger	345
Technology	JPL	Coulter	450
International Explorer (ODIE)	JPL	Hellings	50
2.5 THz Planar Mixer	JPL	Siegel	249
Receivers	JPL	McGrath	249
High Tc Hot Elec. Bolometer	JPL	Kleinsasser	249
Local Oscillator Multiplexer	JPL	Mehdi	302

Local Oscillator Photomixer	JPL	Verghese	166
Detectors	JPL	LeDuc	370
MMIC Devices	JPL	Smith	390
Bolometer	JPL	Bock	390
Cryogenic HEMT	JPL	Lawrence	166
Adv Vis Imagers	JPL	Pain	1944
Hybrid Imaging Technology	JPL	Wadsworth	124
Detectors	JPL	Foote	205
UV/Particle Detectors	JPL	Nikzad	207
(QWIP)	JPL	Gunapala	400
STJ Optical Det.	JPL	Burns	400
Detectors	JPL	Hogue	166
Pixelated CdZnTe Arrays	JPL	Mahoney	100
(ISPI)	JPL	Leschly	300
QWIP-based IR HSI	JPL	Reininger	166
Spectrometer	JPL	Wilson	100
filter/Spect'r on a Chip	JPL	Wang	100
Advanced Radar Technology	JPL	Kim	1240
In Situ Microinstruments	JPL	George	450
Systems	JPL	Grunthaner	249
Magnetometer (MLPM)	JPL	Javadi	207
Lasers & Photonic ICs	JPL	Forouhar	600
Analyzer	JPL	Fuerstenau	124
LIGA/Thick Film Lithography	JPL	Wiberg	415
Microseismometer	JPL	Pike	302
Instrument (ISGI)	JPL	Cardell	332
Spectroscopy	JPL	Ksendzov	207
Micro Weather Station	JPL	Hoenk	302
Spectrometer	JPL	Sinha	207
CMR Oxide Magnetometers	JPL	Vasquez	145
Opacity Profiling	JPL	Menzies	104
(Sorption)	JPL	Wade	550
MicroDIAL	LaRC	Rall	448
Spectrometer Tech.	LaRC	Hinton	230
X-Ray Optics	MSFC	Jones	375
Applications; opt phased	MSFC	Cole	284
Technology	MSFC	Watson	345
Integrated Lidar Scanner	MSFC	Kavaya	270
Devices	HQ	Mucklow	100
		Subtotal	**23,049**
	ARC		395
	GSFC		4651
	JPL		15,951
	LARC		678
	MSFC		1274
	HQ		100

632-20 23049

632-30 Autonomy and Information Management

Robust Mission Operations	ARC	Smith	381
Methods for Simulation,	ARC	Williams	400
Recovery for Ground	ARC	Nayak	450
Executive for Autonomous	ARC	Nayak	700
Rovers	ARC	Smith	300
Validation for Space Missions	ARC	Lowry	500
Execution Agents (IDEA)	ARC	Pell	600
methods for flexible	ARC	Jonsson	700
Analysis for Contraint-Based	ARC	Jonsson	350
Space Systems	ARC	Mah	400
High-Assurance Program	ARC	Lowry	625
Maintenance Aid for Space	ARC	Kulkarni	200
Skunkworks	ARC	Williams	750
Development for NASA	ARC	Van Baalen	400
Autonomous Agents	ARC	Pell	250
Portable Satellite Assistant	ARC	Gawdiak	650
System	ARC	Shirley	400
Modeling	ARC	Cheeseman	750
and Simulation Environment	ARC	Glass	400
Intelligence	ARC	Cheeseman	450
and Decision Making	ARC	Cheeseman	400
Agents for Information	ARC	Keller	420
Browser	ARC	Clancey	650
ScienceDesk	ARC	Keller	450
Planning for Mission Design	JPL	Smith	150
Self-Commanding Spacecraft	JPL	Chien	700
Autonomous Software	JPL	Dvorak	300
C-Based Smart Executive	JPL	Gat	200
Science and Autonomy	JPL	Stolorz	850
Recognition in Scientific	JPL	Mjolsness	450
Body Exploration	JPL	Matthies	250
Engineering Data	JPL	DeCoste	350
Operational Concepts	JPL	Wyatt	400
Testbed	JSC	Malin	623
Diagnostic Filter System/	MSFC	Powers	350
		Subtotal	**16,199**
	ARC		11,576
	JPL		3,650
	JSC		623
	MSFC		350
	632-30		16,199

632-40 Telerobotics

Environments	ARC	Sims	150
Reality Modelling	ARC	Sims	325
MarsScape 2001	ARC-MIT	Salisbury	150
Architecture	ARC-CMU	Simmons	300
Multiple Interacting Robots	ARC-Stanford	Cannon	500
Intelligent Robotics	ARC	Sims	399
in Natural Terrains	ARC	Sims	550
NREC (ARC)	ARC	Sims	250
Robotics Education (FIRST)	ARC	Sims	70
Robotics Education (FIRST)	GSFC	Purves	30
aka Lightweight Surviveable	JPL	Schenker	650
(LRSR)	JPL	Hayati	950
Rovers	JPL	Chimelewski	244
Robotic Subsurface Explorer	JPL	Wilcox	300
Robonaut	JPL	Fiorini	250
Brushless Motors & LoMMAs	JPL	Bar-Cohen	250
For Brushless Motor Control	JPL	Lilienthal	400
Planning and Control of	JPL-MIT	Dubowsky	215
Systems	JPL-MIT	Salisbury	230
NREC (JPL)	JPL	Marzwell	712
Robotics Education (FIRST)	JPL	Lillienthal	0
Space Operations	JSC-UMD	Akin	500
Controllers for Enhanced	JSC-UMD	Sanner	65
Ranger Telerobotic Shuttle E	JSC	Price	1000
Ranger Integration	JSC	Price	2600
Robotic Associate	JSC	Price	100
Robonaut Technology	JSC	Zimmer	1,000
NREC (JSC)	JSC	Price	390
Robotics Education (FIRST)	JSC	Price	60
Robotics Education (FIRST)	KSC	Lopez Del-C	30
Robotics Education (FIRST)	LaRC	Seaton	60
Robotics Education (FIRST)	LeRC	Charleston	30
Robotics Education (FIRST)	MSFC	Pruitt	30
NREC (HQ - to CMU)	HQ	Kadunc	2744
Field Demonstration	HQ-CMU	Kadunc	1,000
Technology	HQ-CMU	Kadunc	600
		Subtotal	**17,134**
	ARC		2,694
	JPL		4,201
	JSC		5,715
	HDQ		4,344
	GSFC		30
	LARC		60

	LERC		30
	KSC		30
	MFSC		30
	632-40		17,134

632-50 Communications

Interoperability (TSTI)	GSFC	Callahan	300
Network Protocols	JPL	Scott	100
NASA Propagation Studies	JPL	Golshan	600
Testbed	JPL	Lay	372
Optical Communications	JPL	Jeganathan	1500
Development	JPL	Kolawa	100
Comm	JPL	Forouhar	300
Photonic Oscillator	JPL	Maleki	100
MCAS	JPL	Agan	1400
Hi-Efficiency SSPA's	JPL	Mittskus	600
ATM Satellite Networks	LeRC	Ivancic	425
Development	LeRC	Bhasin	425
Architectures	LeRC	Bhasin	321
Sat Nets	LeRC	Bhasin	484
of Md	LeRC	Bhasin	765
Antenna Systems	LeRC	Kunath	481
K-band Phased Array	LeRC	Kunath	526
Transmitters/Receivers	LeRC	Kunath	166
Modulation and Coding	LeRC	Fujikawa	490
Modem	LeRC	Fujikawa	586
Switching and Routing	LeRC	Fujikawa	297
University	LeRC	Fujikawa	340
Vacuum Electron Devices	LeRC	Dayton	563
DSN/Planetary	LeRC	Dayton	377
Devices	LeRC	Dayton	460
		Subtotal	**12078**
	GSFC		300
	JPL		5072
	LERC		6706
	632-50		12078

632-60 Programmatics

Advanced Concepts = $1.5M

Adv Concepts - ARC	ARC	Brooks	350
Adv Concepts - GSFC	GSFC	White	50

Adv Concepts - LERC	LERC	Millis	200
Adv Concepts - MSFC	MSFC	O'Neil	50
Adv Concepts - JPL	JPL	Murphy	800
Adv Concepts - Hdq	Hdq	Mucklow	50
PROGRAM PLANNING AND IMPLEMENTATION			
Formulator office	GSFC	Martin	985
Implementor Office	JPL	Prusha	1515
TAMs	Hdq	MDM	600
Resident Research Associat	Hdq	MDM	130
TAP Program Support	JPL	Murphy	500
POSTDOC monthly report s	ARC	Swanson	50
DIRECTOR TASKS	Hdq	Ulrich	
Systems analysis	JPL	Collins	500
Centers	GSFC	Campbell	1250
SAIL	GSFC	Seftas	150
Rice Univ grant	JSC	Vinh	400
other Dir tasks	Hdq	Ulrich	1832
		Subtotal	**9412**
	ARC		400
	GSFC		2435
	JPL		3315
	JSC		400
	MSFC		50
	LARC		
	LERC		200
	HDQ		2612
	632-60		9412
632-70 NRA			
NRA (BAPR)	HDQ	Montemerlo	5000
		Subtotal	**5000**
632-80 - EEE Parts			
EEE Parts	HQ/AE	Mulville	
EEE Parts-JPL	JPL		3157
EEE-GSFC	GSFC		743
		Subtotal	**3900**
HEADQUARTERS Code S TAX			**4037**
UPN 632 GRAND TOTAL			**129,800**

UPN632 FY99 SPREADSHEET 1-29-99 MDM

	ARC	GSFC	LARC	LERC	MSFC	JSC	JPL	KSC	HDQ	TOTAL
632-10	3316	3656	3720	15376	7110		5813			**38991**
632-20	395	4651	678		1274		15951		100	**23049**
632-30	11576				350	623	3650			**16199**
632-40	2694	30	60	30	30	5715	4201	30	4344	**17134**
632-50		300		6706			5072			**12078**
632-60	400	2435		200	50	400	3315		2612	**9412**
632-70									5000	**5000**
632-80		743					3157			**3900**
CODE S TAX									4037	**4037**
TOTAL	**18381**	**11815**	**4458**	**22312**	**8814**	**6738**	**41159**	**30**	**16093**	**129800**
										129800