MASA launch, Sunrise Park Middle School, White Bear Lake, August 28, 1999					Total #	Total
#	Name	Rocket	Motor(s)	Comment	Motors	Impulse
1	Philip Gibbens	Black Hornet	1/2A3-2t		1	1.25
2	Paul Jarosch	Alien Space Probe	C5-3	with troll passenger	1	9.5
3	Thompson	Gemini DC	B6-4		1	5
4	Ed Eastman	Nike Smoke	A8-3		1	2.5
5	Kerry Hodges	Odyssey	C6-5	20+ year old model	1	9
6	Brady Jerve	Skywinder	B6-4		1	5
7	Tyler	Sizzler	C6-3	rear ejection worked perfectly	1	9
8	Ricky Jerve	Navy	C6-5		1	9
9	Art Gibbens	Saturn V	D12-0; D12-3	maiden flight, landed in a back yard	2	34
10	Mollie Frisvold	Mollie's Rocket	C6-3		1	9
11	Lee Frisvold	Twig	B6-4	first flight	1	5
12	Mike Martens	Bad Toad	D12-5	first flight	1	17
13	Ed Eastman	Silver Comet	D12-3	first flight	1	17
14	John Knoll	Naboo Fighter	C6-3	first flight	1	9
15	Rob Sieg	AMRAAM	C6-5	first flight	1	9
16	Lee Jerve	Moondog	A10-3t		1	2.5
17	Lee Frisvold	Mean Machine Clone	D12-3	first flight	1	17
18	Greg Debelser	Ionizer	C6-5	first C engine	1	9
19	Glen Overby	Aerobee-HI	D9-4	"whoa mama!" - eventually found	1	20
20	Robert	Big Daddy	D12		1	17
21	Mike Martens	F22	C6-3		1	9
22	Tyler	Yellow Jacket	B6-4		1	5
23	Frankie Kinderman	Wizard	A8-3		1	2.5
24	Mollie Frisvold	Exoskell	C5-3	no chute! (ouch)	1	9.5
25	Paul Jarosch	Titan IIIc	D12-5		1	17
26	Brian Fergus	Nike Arrow	1/2A3-4t		1	1.25
27	Kerry Hodges	Der Red Max	C6-5	20+ years old, once had 3 trees cut down to recover it	1	9
28	Brady Jerve	Army	B6-4		1	5
29	Peder	Gemini DC	C6-5		1	9
30	Sarah Fergus	2x Nike Arrow	B6-4	maiden flight	1	5
31	Art Gibbens	Mercury Redstone	B6-4	carried a Lego astronaut with chute	1	5
32	Ken Jarosch	PathFinder	D12-5		1	17
33	Ricky Jerve	Navy	B6-4		1	5
34	Dave Fergus	Silver Comet	C5-3	trying a smaller engine	1	9.5
35	Chuck Jerve	Astrocam	C6-7	cheese!	1	9
36	Mike Martens	Stomp	B6-4		1	5
37	Brian Fergus	Venom	A8-3		1	2.5
38	Rob Sieg	Zinger	C6-5		1	9
39	Alan Estenson	Minne-skeeter	B4-4	drag race with Kerry	1	5
40	Kerry Hodges	Minnesota Mosquito	B4-4	drag race with Alan, no chute though!	1	5
41	John Knoll	Mercury Atlas	D12-3	first flight	1	17

42	Brady Jerve	Skywinder	C6-3	drag race	1	9
43	Brian	Skywinder	C6-0	drag race, landed in several pieces	1	9
44	Frank	Wizard	A8-3		1	2.5
45	Lee Frisvold	Mongoose	B6-0; B6-6		2	10
46	Mollie Frisvold	Twister	1/2A6-2		1	1.25
47	Andy Jirele	Seawolf	D12-3	maiden flight - nice, but landed on the roof	1	17
48	Dave Fergus	Nike Arrow	C5-3		1	9.5
49	Mathias Gibbens	Mosquito	1/2A3-4t	maiden flight	1	1.25
50	Tyler T.	Yellow Jacket	B6-4		1	5
51	Alan Estenson	Maniac	D12-7	drag race, landed on asphalt & broke a fin	1	17
52	Diane Frisvold	Maniac	D12-5	drag race, no ejection	1	17
53	Paul Jarosch	Strikefighter	C5-3		1	9.5
54	Lee Frisvold	Lightning	D12-5		1	17
55	Caitlin Bright	Alpha 3	C6-5	really went!	1	9
56	Joe Kimmes	Trident	B6-4	first flight	1	5
57	Derek Thell	Serval	B6-4	first flight	1	5
58	Damian	Apollo Capsule	C6-3		1	9
59	Josh	Big Bertha	B6-4		1	5
60	Ricky Jerve	Army	B6-4		1	5
61	Rob Sieg	Venus Probe	C6-5		1	9
62	Kristen	Zinger	A8-3		1	2.5
63	Rob Sieg	Quark	A?		1	1.25
64	Peder	Gemini DC	B6-4		1	5
65	Mark Thell	scratch	D?	tower launch	1	17
66	David Fergus	Sidewinder	C5-3	maiden flight	1	9.5
67	Brian	Big Daddy	D12-7	drag race	1	17
68	Don Kilberg	Big Daddy	D12-5	drag race	1	17
69	Kerry Hodges	replica Goblin	B2-5	long burn - lawn dart!	1	5
70	Brady Jerve	Skywinder	C6-3		1	9
71	Brian Kilberg	Zinger	A8-3		1	2.5
72	Kent Peterson	Navajo	B6-0;	2nd stage on B6-6 didn't light, lawn dart!	1	5
73	Ed Eastman	Gold Strike	B6-4		1	5
74	Lee Jerve	Moondog	A10-3t	streamer recovery	1	2.5
75	David Bright	Mosquito	1/2A3-4t	maiden flight	1	1.25
76	Tyler T.	Big "Beartha"	C6-3	corkscrew flight	1	9
77	Alan Estenson	Python	D12-5	good flight	1	17
78	Paul Jarosch	Saturn 1B	D12-5		1	17
79	Art Gibbens	Robot	B4-2		1	5
80	Ken Jarosch	Interceptor	D12-5		1	17
81	John Knoll	Mercury Atlas	D12-3	2nd flight	1	17
82	Mollie Frisvold	Deep Purple Brant	D12-5	first flight	1	17
83	Lee Frisvold	Big Daddy	D12-5		1	17
84	Josh	Wildfire	B6-4		1	5
85	Kristen	Zinger	A8-3		1	2.5

86	Ed Eastman	Gemini	A10-3t		1	2.5
87	Josh	Big Bertha	C6-5		1	9
88	Brian Fergus	Venom	B6-4		1	5
89	Rob Sieg	Quark	A?		1	2.5
90	Derek Thell	Serval	B6-4		1	5
91	Mollie Frisvold	Mollie's Rocket	C6-3		1	9
92	Lee Frisvold	Twig	A8-3		1	2.5
93	Art Gibbens	America	B6-6		1	5
94	Mark Thell	Big Alpha	D12-5		1	17
95	Alan Estenson	Asteroid Hunter	B6-4		1	5
96	Don Kilberg	Big Daddy	D12-5		1	17
97	Rob Sieg	Atlas	C6-5		1	9
98	Brian Kilberg	Bandit	B6-4		1	5
99	Caitlin Bright	Mosquito	1/2A3-4t	gone!	1	1.25
100	Brady Jerve	Trans-wing	C6-3	half of the wing didn't unfold - crash!	1	9
101	Christopher Kvidera	Shadow	D12-3	weak ejection - core sample	1	17
102	Glen Overby	Blue Thing	C6-5		1	9
103	Art Gibbens	Gemini DC	C5-3	"beauty!"	1	9.5
104	Joe Kimmes	Patriot	B6-4		1	5
105	Paul Jarosch	Super Vega	D12-3	great flight!	1	17
106	Tyler T.	Payloader	C6-5		1	9
107	Ken Jarosch	Black Brant	C5-3		1	9.5
108	Josh	Wildfire	B6-4		1	5
109	Kristen	Zinger	A8-3		1	2.5
110	Josh	Big Bertha	C6-3		1	9
111	Seth Cochran	UFO	MicroMaxx	nice	1	0.2
112	Alan Estenson	Snitch	C6-0		1	9
113	Alan Estenson	Invader	C6-0		1	9
114	Mollie Frisvold	Snitch	C6-0		1	9
115	Damian	UFO	C6-0		1	9
116	Russ Durkee	Centuri UFO	C6-0	1981 vintage	1	9
117	Ted Cochran	Snitch	C6-0		1	9
118	Rob Sieg	Venus Probe	C5-3		1	9.5
119	Joe Kimmes	Initiator	E15-4	nice flight	1	40
120	Brenda Everitt	Big Brenda	D12-7	nice	1	17
121	Russ Durkee	Stomp	C6-7	BOINK!	1	9
122	Alan Estenson	Onyx	E15-4	thrust vectored - landed in a back yard	1	40
123	Mollie Frisvold	Mongoose	C6-0; B6-6	nice staging!	2	14
124	Christopher Kvidera	Buick	A8-3		1	2.5
125	Brian Kilberg	Bandit	B6-4		1	5
126	Art Gibbens	K+S tube rocket	D12-0; C6-7	good staging	2	26
127	David Fergus	Saturn V	MicroMaxx	low, ejection	1	0.2
128	David Fergus	Space Shuttle	MicroMaxx	perfect	1	0.2
129	Josh	Wildfire	C6-3		1	9

130	Kent Peterson	Zenith	B6-0; B6-6	nice	2	10
131	Lee Frisvold	Twig	A8-3		1	2.5
132	Mark	AMRAAM	C6-3		1	9
133	Seth Cochran	Skywinder	B6-2	nice	1	5
134	Tyler T.	Sizzler	C6-3		1	9
135	Ted Cochran	Zoomie	1/2A3-2t	zoom!	1	1.25
136	Christopher Kvidera	Meteor	C6-5		1	9
137	Rob	AMRAAM	C6-7		1	9
138	Philip Gibbens	Black Hornet	1/2A3-2t		1	1.25
139	Joe Kimmes	Long Shot	B6-4	upper stage only, no chute	1	5
140	Cochran	Skywinder	C6-3		1	9
141	Russ Durkee	Sludge	A10-3t	ex Estes Cobra	1	2.5
142	Art Gibbens	Robot	C6-5		1	9
143	Tyler T.	Payloader	C6-5		1	9
144	Derrick	Red Storm	C6-5		1	9
145	Mollie Frisvold	Mongoose	B6-0;	no upper stage ignition - lawn dart!	1	5
146	Ted Cochran	Silver Comet	D12-5	spiffy spinning chute!	1	17
147	Alan Estenson	RQ-70	B6-4	good	1	5
148	Alan Estenson	Warrior 56	C6-5	good	1	9
149	Ted Cochran	ARV Condor	B6-4	great flight!	1	5
150	Kent Peterson	Fat Boy	C6-5		1	9
151	Christopher Kvidera	Deltie	1/2A3-2t	stuck in softball back stop!	1	1.25
152	Russ Durkee	Sludge Pit	A10-3t		1	2.5
153	Russ Durkee	Stomp	B4-6		1	5
154	Russ Durkee	UFO	C6-0		1	9
155	Carl Persson	Humpty Dumbty	C6-3	Humpty lives!	1	9
156	Art Gibbens	Can't remember	B6-0; A8-5		2	7.5
157	Rob	Egger	C6-5		1	9
158	Ted Cochran	Viking	MicroMaxx	1/144 sounding rocket model, went really high!	1	0.2
159	Mark Thell	Impulse	(2) D12-7	good	1	34
160	Ted Cochran	Fat Boy	B6-2		1	5
161	David Fergus	R2-D2	B6-4	(actually the first flight of the day…)	1	5
					167	**1431.8**

Total Flights:	**161**
Total Motors:	**167**
Total Impulse (N-s):	**1431.8**
Average Impulse (N-s):	**8.6**

Motor Distribution	
MM	4
1/4 A	0
1/2A	9
A	19
B	44
C	57

D	32
E	2
F	0
G	0
H	0