1
00:00:06,759 --> 00:00:12,340
CUBESATS MADE THEIR REPUTATION
FOR SUCCESS ON THE STRENGTH OF

2
00:00:12,340 --> 00:00:16,250
FITTING BIG SCIENCE INTO A SMALL
SPACE.

3
00:00:16,250 --> 00:00:19,039
FORECASTING WEATHER,
COMMUNICATING USING EXPERIMENTAL

4
00:00:19,039 --> 00:00:27,140
METHODS AND TRYING OUT NEW POWER
SYSTEMS, ARE JUST A FEW OF THE

5
00:00:27,140 --> 00:00:29,340
CONTRIBUTIONS THEY ARE MAKING TO
SPACE SCIENCE.

6
00:00:29,340 --> 00:00:32,029
EXPERIMENTALS ARE PROVING THEIR
VALUE TO RESEARCHERS RIDING

7
00:00:32,029 --> 00:00:36,480
PIGGYBACK INTO SPACE.
NASA'S INSIDE MISSION TO MARS

8
00:00:36,480 --> 00:00:42,309
CARRIED THEM AS COMMUNICATION
ESCORTS WHEN IT LIFTS OFF EARLY

9
00:00:42,309 --> 00:00:47,379
IN 2016.
NOW, THEY WILL GET THEIR OWN

10
00:00:47,379 --> 00:00:52,329
INTO SPACE COMPLETE WITH ORDERS
TAILORED TO THEIR RESEARCH AND

11
00:00:52,329 --> 00:00:54,870
SPECIFICATIONS UP TO NASA
STANDARDS.

12
00:00:54,870 --> 00:00:59,739
STARTING AS SOON AS 2017, THREE
COMPANIES WILL BEGIN LAUNCHING

13
00:00:59,739 --> 00:01:04,710
CLUSTERS OF CUBES INTO ORBIT.
WITH NEW LAUNCH CAPABILITIES FOR

14
00:01:04,710 --> 00:01:09,140
SMALL SPACECRAFT, THE SCIENCE
RETURN OF RESEARCH OFF THE EARTH

15
00:01:09,140 --> 00:01:19,830
FOR THE EARTH IS EXPECTED TO
ONLY GET BIGGER.

16
00:01:19,830 --> 00:01:24,330
>> HELLO, EVERYONE.
THIS IS OUR BRIEFING TO

17
00:01:24,330 --> 00:01:27,890
INTRODUCE THE WINNERS OF NASA'S
VENTURE CLASS LAUNCH SERVICES

18
00:01:27,890 --> 00:01:32,030
CONTRACT COMPETITION.
IT'S THE START OF HAVING A

19
00:01:32,030 --> 00:01:35,380
PRIVATELY DEVELOPED DEDICATED
LAUNCH CAPABILITY FOR NASA

20
00:01:35,380 --> 00:01:40,560
SPONSORED CUBE SATS AND THE
GROWING SMALL SATELLITE MARKET.

21
00:01:40,560 --> 00:01:43,750
WE'LL BEGIN BY HEARING FROM
REPRESENTATIVES FROM NASA'S

22
00:01:43,750 --> 00:01:47,000
LAUNCH SERVICES PROGRAM AT
KENNEDY AND FROM THE EARTH

23
00:01:47,000 --> 00:01:50,780
SCIENCE DIVISION AT NASA
HEADQUARTERS.

24
00:01:50,780 --> 00:01:54,060
AND THEN FROM REPRESENTATIVES
FROM THE THREE COMPANIES AWARDED

25
00:01:54,060 --> 00:01:59,730
THE LAUNCH SERVICES CONTRACT.
FIREFLY SPACE SYSTEMS, ROCKET

26
00:01:59,730 --> 00:02:05,360
LAB USA, AND VIRGIN GALACTIC.
AND WE'LL BEGIN FIRST WITH

27
00:02:05,360 --> 00:02:10,090
GARRET SKROBOT, THE ELaNa
MISSION LEAD FOR THE MISSION

28
00:02:10,090 --> 00:02:13,379
PROGRAM AND MISSION MANAGER FROM
THE KENNEDY SPACE CENTER.

29
00:02:13,379 --> 00:02:17,370
>> THANK YOU, GEORGE.
GOOD AFTERNOON, EVERYONE.

30
00:02:17,370 --> 00:02:20,540
WELCOME TO TODAY'S ANNOUNCEMENT
OF THE VENTURE CLASS LAUNCH

31
00:02:20,540 --> 00:02:23,829
SERVICE.
THIS IS VERY EXCITING FOR ME AND

32
00:02:23,829 --> 00:02:27,010
I CAN SPEAK FOR THE WHOLE CUBE
SAT COMMUNITY TODAY AS THE

33
00:02:27,010 --> 00:02:29,700
INITIAL DEVELOPMENT OF THE FIRST
CUBE SAT WAS BACK IN THE

34
00:02:29,700 --> 00:02:33,870
LATE†'90s AND IT WAS AT STANFORD
UNIVERSITY.

35
00:02:33,870 --> 00:02:40,049
TODAY, UNTIL TODAY, CUBE SATS
HAVE BASICALLY DEPENDED ON OTHER

36
00:02:40,049 --> 00:02:44,359
LAUNCH VEHICLES TO OBTAIN THEIR
RIDES INTO SPACE AS PIGGYBACKS,

37
00:02:44,359 --> 00:02:46,700
HITCH HIKERS.
BASICALLY WE'VE BEEN CALLED

38
00:02:46,700 --> 00:02:52,920
COACH CLASS TO SPACE.
AND NOW THAT WE HAVE 1 U AND 6 U

39
00:02:52,920 --> 00:02:58,079
FRAMES JUST WANTED TO GIVE A
QUICK DEMONSTRATION AND WHAT IT

40
00:02:58,079 --> 00:03:01,510
REALLY IS.
THIS IS AN ACTUAL 1 U FRAME.

41
00:03:01,510 --> 00:03:06,249
THIS WAS IN THE VERY BEGINNING
AND THE VERY GENESIS OF THIS WAS

42
00:03:06,249 --> 00:03:09,299
A BEANIE BABY BOX.
PEOPLE CAN REMEMBER BACK IN THE

43
00:03:09,299 --> 00:03:11,790
DAY WHEN THE BEANIE BABIES CAME
TO MARKET, THEY WERE IN LITTLE

44
00:03:11,790 --> 00:03:16,969
GLASS BOXES.
MR. BOB TWIGGS OF STANFORD

45
00:03:16,969 --> 00:03:20,669
UNIVERSITY, TOOK THIS TO HIS
CLASSROOM AND SAYS, WHO IN THIS

46
00:03:20,669 --> 00:03:24,409
CLASS CAN MAKE THIS A SATELLITE
TO DO USEFUL SCIENCE ON SPACE

47
00:03:24,409 --> 00:03:29,480
AND TODAY WE SEE WHERE THE
REVOLUTION HAS GONE TO AND FROM

48
00:03:29,480 --> 00:03:33,180
THERE, IT'S GROWN TO A 2 U AND
NOW WE DON'T HAVE A 3 WITH US

49
00:03:33,180 --> 00:03:36,919
BUT YOU CAN TAKE THOSE, WE HAVE
A 3 U SYSTEM.

50
00:03:36,919 --> 00:03:40,049
PREVIOUSLY IN THE VIDEO, WE
HEARD THAT INSIGHT WILL BE CARRY

51
00:03:40,049 --> 00:03:45,010
TWO 6 U AND THESE ARE THE FRAMES
THE SPACECRAFT WILL BE GOING TO

52
00:03:45,010 --> 00:03:49,700
MARS AND DOING A MARTIAN FLYBY
AS INSIGHT DESCENDS INTO THE

53
00:03:49,700 --> 00:03:53,249
MARTIAN ATMOSPHERE TO COLLECT
DATA REAL TIME AND TRANSMIT THAT

54
00:03:53,249 --> 00:03:54,659
BACK TO EARTH FOR THE FIRST
TIME.

55
00:03:54,659 --> 00:04:01,150
SO WE'RE VERY EXCITED ABOUT THAT
LAUNCH IN MARCH 4th OF 2016.

56
00:04:01,150 --> 00:04:06,370
SO, BY FLYING PIGGYBACK
BASICALLY MEANT WE HAD TO GO

57
00:04:06,370 --> 00:04:09,719
WHERE THE PRIMARY WENT.
WE WERE NOT ABLE TO SELECT OUR

58
00:04:09,719 --> 00:04:11,349
ORBITS.
WE HAD TO BUILD OUR SCIENCE

59
00:04:11,349 --> 00:04:15,029
AROUND THE PARTICULAR ORBITS OR
SACRIFICES SOME OF THE SCIENCE.

60
00:04:15,029 --> 00:04:18,280
HOWEVER TODAY, NOW WITH THE NEW
VENTURE CLASS LAUNCH SYSTEMS

61
00:04:18,280 --> 00:04:20,840
THIS IS NO LONGER THE CASE.
THE CUBE SATS WILL BE THE

62
00:04:20,840 --> 00:04:22,950
PRIMARY PAYLOADS ON THE
VEHICLES.

63
00:04:22,950 --> 00:04:27,010
WE CAN SAY NOW WE ARE RIDING
FIRST CLASS.

64
00:04:27,010 --> 00:04:31,660
SO WITH THESE OPPORTUNITIES,
THEY WILL BE ABLE TO GO TO THEIR

65
00:04:31,660 --> 00:04:35,320
DESIRED ORBITS, TO DO THEIR
SCIENCE, THEIR TECHNOLOGIES AS

66
00:04:35,320 --> 00:04:39,290
THEY NEED TO, TO BETTER ENHANCE
THE FUTURE MISSIONS.

67
00:04:39,290 --> 00:04:42,570
SO WITHIN THE LAUNCH SERVICES
PROGRAM, WE MANAGE THE ELaNa

68
00:04:42,570 --> 00:04:46,850
EDUCATIONAL LAUNCH SATELLITE
MISSIONS AND TO DATE, WE HAVE

69
00:04:46,850 --> 00:04:50,850
LAUNCHED 10 MISSIONS.
LAST THURSDAY WAS OUR TENTH

70
00:04:50,850 --> 00:04:53,650
FLIGHT.
OF WHICH 41 CUBE SATS HAVE

71
00:04:53,650 --> 00:04:56,420
FLOWN.
SO OF THESE 41 CUBE SAT

72
00:04:56,420 --> 00:05:00,570
MISSIONS, 20 DIFFERENT
UNIVERSITIES ACROSS AMERICA HAVE

73
00:05:00,570 --> 00:05:04,410
BEEN REPRESENTED.
FLYING THEIR CUBE SATS.

74
00:05:04,410 --> 00:05:08,510
WE SELECT OUR CUBE SATS TO THE
AGENCY'S LAUNCH INITIATIVE.

75
00:05:08,510 --> 00:05:12,890
THIS IS AN APPROACH BY WHICH WE
PUT A CALL OUT EVERY YEAR AND

76
00:05:12,890 --> 00:05:15,690
RIGHT NOW WE WERE IN THE MIDDLE
OF THE CALL TO A SET PROPOSALS

77
00:05:15,690 --> 00:05:21,310
FROM EDUCATIONAL INSTITUTIONS,
NON-PROFITS OR EVEN NASA CENTERS

78
00:05:21,310 --> 00:05:24,660
WILL SEND THEIR PROPOSALS.
WE EVALUATE THE PROPOSALS, PUT

79
00:05:24,660 --> 00:05:27,990
THEM ON OUR PRIORITY LIST,
SUBMIT THEM, THEY HAND THEM TO

80
00:05:27,990 --> 00:05:32,370
US AND WE START MANIFESTING AS
WE GO DOWN THE PIPE.

81
00:05:32,370 --> 00:05:34,870
WITH THAT OVER THE NEXT 13
MONTHS WE STILL HAVE FIVE MORE

82
00:05:34,870 --> 00:05:38,370
ELaNa MISSIONS TO FLY WITH 14
CUBE SATS AND OVER THE NEXT

83
00:05:38,370 --> 00:05:42,430
THREE YEARS, WITH THE BIG HELP
FROM THE VENTURE CLASS LAUNCH

84
00:05:42,430 --> 00:05:47,020
SYSTEMS WE WILL BE ABLE TO FLY
OUR 50 UNMANIFESTED CUBE SATS ON

85
00:05:47,020 --> 00:05:50,650
OUR CSI PRIORITY LIST.
ONE ANNOUNCEMENT I CAN MAKE

86
00:05:50,650 --> 00:05:56,770
TODAY WE CAN NAME OUR MISSIONS
ELaNa 19, 20 AND 21 AND EACH ONE

87
00:05:56,770 --> 00:06:00,270
OF THESE MISSIONS WILL CARRY
ANYWHERE 45 TO 90, 1 U

88
00:06:00,270 --> 00:06:03,660
EQUIVALENTS ON THESE MISSIONS.
BACK TO YOU, GEORGE.

89
00:06:03,660 --> 00:06:07,620
>> THANK YOU, GARRET.
TO ERIC IANSON, THE ASSOCIATE

90
00:06:07,620 --> 00:06:10,590
DIRECTOR FOR FLIGHT PROGRAMS FOR
THE EARTH SCIENCES DIVISION IN

91
00:06:10,590 --> 00:06:12,940
THE NASA SCIENCE†MISSION
DIRECTORATE AND NASA

92
00:06:12,940 --> 00:06:16,180
HEADQUARTERS.
>> THANK YOU, GEORGE.

93
00:06:16,180 --> 00:06:19,080
IT'S VERY EXCITING TO HERE TODAY
FOR THE ANNOUNCEMENT OF THE

94
00:06:19,080 --> 00:06:21,170
AWARDEES FOR THE VENTURE CLASS
LAUNCH SERVICES.

95
00:06:21,170 --> 00:06:24,690
MOST OF THE PANELISTS HERE ARE
FROM THE LAUNCH VEHICLE SIDE.

96
00:06:24,690 --> 00:06:27,370
I'M HERE TO REPRESENT ONE OF THE
ORGANIZATIONS THAT HOPES TO

97
00:06:27,370 --> 00:06:31,460
UTILIZE THE NEW CAPABILITY.
NASA AIR SCIENCE DIVISION PUSHES

98
00:06:31,460 --> 00:06:34,900
THE ENVELOPE FOR REMOTE SENSING
INSTRUMENTS AND MISSIONS.

99
00:06:34,900 --> 00:06:39,840
VENTURE CLASS INVESTIGATES ARE
DESIGNED TO DEVELOP AND INNOVATE

100
00:06:39,840 --> 00:06:44,720
SMALL SCIENCE DRIVEN PAYLOADS.
THROUGH THE VENTURE CLASS

101
00:06:44,720 --> 00:06:48,870
PROGRAM, NASA SOLICITS
INSTRUMENTS WHERE NASA FINDS THE

102
00:06:48,870 --> 00:06:54,110
SPACECRAFT AND THE RIDE AS WELL
AS COMPLETE MISSIONS.

103
00:06:54,110 --> 00:06:57,890
A LOW-COST LAUNCH VEHICLE
CAPABILITY TO SUPPORT SMALL,

104
00:06:57,890 --> 00:07:01,280
LOW-COST, INNOVATIVE PAYLOADS IS
A KEY STEP FORWARD FOR EARTH

105
00:07:01,280 --> 00:07:04,740
VENTURE PROJECTS.
DEVELOPING LOW-COST LAUNCH

106
00:07:04,740 --> 00:07:08,180
VEHICLES THAT PROVIDE ACCESS TO
SPACE FOR THESE PAYLOADS WILL

107
00:07:08,180 --> 00:07:11,020
RESULT IN A SWEEP BALANCE
BETWEEN MISSION CAPABILITY AND

108
00:07:11,020 --> 00:07:13,750
INVESTMENT.
AFFORDABLE LAUNCH VEHICLES WILL

109
00:07:13,750 --> 00:07:19,560
ALLOW NASA TO COMPLETE YET†-- TO
FLY COMPLETE LOW COST MISSIONS

110
00:07:19,560 --> 00:07:22,770
THAT REMAIN FOCUSED ON SCIENCE
DATA.

111
00:07:22,770 --> 00:07:27,890
THE KEY IS GETTING SCIENCE
PAYLOADS INTO SPACE WHEN AND

112
00:07:27,890 --> 00:07:30,630
WHERE THEY ARE NEEDED.
THAT IS, WE DON'T HAVE TO

113
00:07:30,630 --> 00:07:34,210
COMPROMISE SCIENCE OBJECTIVES TO
CONFORM TO THE MISSION NEEDS OF

114
00:07:34,210 --> 00:07:37,050
A LARGER PRIMARY PAYLOAD.
THE EARTH SCIENCE DIVISION

115
00:07:37,050 --> 00:07:40,300
SUPPORT FOR THESE EMERGING
LAUNCH VEHICLES IS DEMONSTRATED

116
00:07:40,300 --> 00:07:42,770
BY OUR PARTICIPATION IN THE
EXCITING ACTIVITY WE'RE

117
00:07:42,770 --> 00:07:46,060
DISCUSSING TODAY.
I CONGRATULATE THE AWARDEES AND

118
00:07:46,060 --> 00:07:49,780
LOOK FORWARD TO THE LAUNCHES AS
A FIRST STEP TO THE FUTURE.

119
00:07:49,780 --> 00:07:54,090
LOW COST VEHICLES LIKE THESE
WILL ALLOW US TO ADD CUBE SATS

120
00:07:54,090 --> 00:07:59,170
TODAY AND LARGER SMALL
SATELLITES TOMORROW TO OUR

121
00:07:59,170 --> 00:07:59,650
SCIENCE TOOLBOX.
THANK YOU.

122
00:07:59,650 --> 00:08:03,889
BACK TO YOU, GEORGE.
>> THANK YOU, ERIC.

123
00:08:03,889 --> 00:08:07,040
AND NOW TO MARK WIESE, THE
FLIGHT PROJECTS OFFICE CHIEF FOR

124
00:08:07,040 --> 00:08:09,580
THE NASA LAUNCH SERVICES
PROGRAM, HERE AT KENNEDY SPACE

125
00:08:09,580 --> 00:08:10,520
CENTER.
MARK?

126
00:08:10,520 --> 00:08:13,560
>> THANK YOU, GEORGE.
SO AGAIN, FIRST OFF, A BIG

127
00:08:13,560 --> 00:08:17,840
CONGRATULATIONS THE AWARDEES.
THIS HAS BEEN A BIG PUSH THAT

128
00:08:17,840 --> 00:08:21,530
WE'VE BEEN GOING TOWARDS AND TO
GET HERE TODAY IT'S A HUGE STEP

129
00:08:21,530 --> 00:08:23,650
FOR THE COMMERCIALIZATION OF
SPACE, EVEN THOUGH WE'RE TALKING

130
00:08:23,650 --> 00:08:27,400
ABOUT THREE SMALLER ROCKETS.
SO LAUNCH SERVICES PROGRAM,

131
00:08:27,400 --> 00:08:29,950
WHICH WE REPRESENT HERE AT
KENNEDY, WE ARE EARTH'S BRIDGE

132
00:08:29,950 --> 00:08:33,539
TO SPACE, SO WE PROVIDE THE
SCIENCE COMMUNITY THAT ERIC IS

133
00:08:33,539 --> 00:08:37,339
HERE REPRESENTING FROM
EXPLORATION TO EARTH SCIENCE TO

134
00:08:37,339 --> 00:08:40,940
OUR GALAXY, THAT WAY TO GET UP
TO SPACE.

135
00:08:40,940 --> 00:08:43,770
SO WE'VE BEEN HERE FOR THE LAST
15 PLUS YEARS AT KENNEDY

136
00:08:43,770 --> 00:08:46,760
LEVERAGING PROJECT MANAGEMENT,
INTEGRATION, ENGINEERING AND

137
00:08:46,760 --> 00:08:49,640
ANALYSIS SKILLS TO TRY TO MAKE
THAT HARD ROCKET SCIENCE

138
00:08:49,640 --> 00:08:52,820
BUSINESS EASY.
WHETHER IT'S A NEW HORIZONS

139
00:08:52,820 --> 00:08:57,270
MISSION WE SAW GOING TO PLUTO OR
A MARS ROVER EXPLORING TO THE

140
00:08:57,270 --> 00:09:00,370
AMAZING EARTH SCIENCE STUFF THAT
HELPS US UNDERSTAND OUR PLANET

141
00:09:00,370 --> 00:09:02,170
TODAY.
WE SERVE THE SCIENCE COMMUNITY

142
00:09:02,170 --> 00:09:05,510
AS THE LAUNCH BROKER.
THE GOAL OF HELPING ENABLE A

143
00:09:05,510 --> 00:09:08,510
HEALTHY U.S. COMMERCIAL LAUNCH
INDUSTRY AND WE'RE ALWAYS

144
00:09:08,510 --> 00:09:11,440
SEEKING WAYS TO LOWER THAT COST
TO TRY TO HELP MORE SCIENCE GET

145
00:09:11,440 --> 00:09:13,900
TO ORBIT.
THE VENTURE CLASS LAUNCH SERVICE

146
00:09:13,900 --> 00:09:16,810
WAS BORN OUT OF A STRATEGIC
INITIATIVE LED BY LAUNCH

147
00:09:16,810 --> 00:09:21,510
SERVICES PROGRAM WITH A NEW WAY
TO GET TO SPACE WITH A LOWER

148
00:09:21,510 --> 00:09:25,250
PRICE TAG COMPARED TO THE 100
MILLION PLUS WE SEE FOR THE

149
00:09:25,250 --> 00:09:28,930
LARGER MISSIONS.
TODAY THE WORLD IS AT A UNIQUE

150
00:09:28,930 --> 00:09:31,310
PIVOT POINT WITH THE LAUNCH
MARKET.

151
00:09:31,310 --> 00:09:35,450
SO WE HAVE A CHANCE TO ENABLE
THIS NEW COMMERCIALIZATION OF

152
00:09:35,450 --> 00:09:38,390
SPACE GROWTH THAT CUBE SATS HAVE
OPENED UP.

153
00:09:38,390 --> 00:09:40,830
SO THERE'S BOTH NEW AND VETERAN
COMPANIES PRESSING AHEAD WITH

154
00:09:40,830 --> 00:09:44,320
BIG PLANS FOR USING SPACE AS A
PLATFORM TO IMPROVE OUR EVERYDAY

155
00:09:44,320 --> 00:09:46,260
LIVES.
THE KENNEDY SPACE CENTER HERE

156
00:09:46,260 --> 00:09:50,150
HAS BEEN PUSHING TO IMPROVE AND
BECOME A MULTIUSER SPACE PORT

157
00:09:50,150 --> 00:09:53,180
FOR ALL KINDS OF LAUNCHES GOING
FORWARD AND WE'RE AT A POINT IN

158
00:09:53,180 --> 00:09:57,250
TECHNOLOGY WHERE INNOVATIONS,
MANUFACTURING, AND THE GROWING

159
00:09:57,250 --> 00:10:00,130
NEED FOR DATA IN OUR HANDS REAL
TIME HAS KIND OF OPENED THE DOOR

160
00:10:00,130 --> 00:10:04,180
WHERE WE'RE AT WITH CUBE SATS.
SO SPACE IS NO LONGER JUST FOR

161
00:10:04,180 --> 00:10:06,590
HIGH VALUE SCIENCE OR THE
INTELLIGENCE COMMUNITY.

162
00:10:06,590 --> 00:10:11,170
IT IS A PLACE FOR A PAYLOAD YOU
CAN CREATE THAT CAN GET UP TO

163
00:10:11,170 --> 00:10:12,960
SPACE.
SO OUR STRATEGIC STEP HERE WITH

164
00:10:12,960 --> 00:10:17,060
VCLS ENABLE THAT FUTURE CLASS OF
ROCKETS FOR CUBE SATS AND THE

165
00:10:17,060 --> 00:10:20,279
COMMUNITY AS IT GROWS AND WE'RE
HERE TODAY FROM THAT AMAZING

166
00:10:20,279 --> 00:10:24,920
INVESTMENT IN HELPING US TRY TO
BRING THIS CAPABILITY TO MARKET.

167
00:10:24,920 --> 00:10:27,250
THE HEALTHY COMPETITION THAT
WE'RE ABLE TO SPUR FORWARD WITH

168
00:10:27,250 --> 00:10:30,279
THESE THREE AWARDS WILL HELP US
ALL STAY ON THE LEADING EDGE OF

169
00:10:30,279 --> 00:10:33,110
MAKING SURE THIS INDUSTRY
THRIVES.

170
00:10:33,110 --> 00:10:35,570
THESE THREE VEHICLES THAT WE'RE
GOING TO PROVIDE TO YOU TODAY

171
00:10:35,570 --> 00:10:38,380
AND SHOW YOU, THEY'RE ALL
COMMERCIALLY DEVELOPED.

172
00:10:38,380 --> 00:10:39,529
TRADITIONALLY WHEN THE
GOVERNMENT BRINGS A NEW

173
00:10:39,529 --> 00:10:42,230
CAPABILITY FORWARD, IT'S
SOMETHING THAT THE GOVERNMENT

174
00:10:42,230 --> 00:10:43,710
PUTS MONEY OUT TO TRY TO
DEVELOP.

175
00:10:43,710 --> 00:10:46,570
HERE, BECAUSE OF THAT EMERGING
COMMERCIAL CAPABILITY, THAT

176
00:10:46,570 --> 00:10:49,200
EMERGING MARKET, THERES'S
PRIVATE INVESTMENT BACKING THE

177
00:10:49,200 --> 00:10:51,910
NONREOCCURRING DEVELOPMENT COST
OF THESE ROCKETS.

178
00:10:51,910 --> 00:10:55,170
TRADITIONALLY THAT REPRESENTS 10
TO 20 TIMES AN INITIAL UPFRONT

179
00:10:55,170 --> 00:10:58,480
COST OF WHAT YOU SEE FOR WHAT WE
PAY FOR A LAUNCH SERVICE.

180
00:10:58,480 --> 00:11:00,560
THE GOVERNMENT DOESN'T HAVE TO
FOOT THAT BILL TODAY.

181
00:11:00,560 --> 00:11:03,680
SO WE ARE ABLE TO BRING FORWARD
A NEW CAPABILITY WITH THE

182
00:11:03,680 --> 00:11:06,380
SUCCESS OF THESE LAUNCHES.
SO WE'VE BROUGHT THREE

183
00:11:06,380 --> 00:11:09,160
DEMONSTRATION FLIGHTS.
THESE THREE COMPANIES WILL,

184
00:11:09,160 --> 00:11:12,160
BEFORE APRIL OF 2018, WILL
DEMONSTRATE THEIR LAUNCH.

185
00:11:12,160 --> 00:11:14,470
IT WILL GIVE THE LAUNCH SERVICE
PROGRAM INSIGHT AND OPEN THE

186
00:11:14,470 --> 00:11:18,290
DOOR FOR COMMUNITIES TO BRING
SMALLER PAYLOADS FORWARD.

187
00:11:18,290 --> 00:11:19,460
WE'RE EXCITED FOR THE
COMPETITION.

188
00:11:19,460 --> 00:11:22,330
I CAN ONLY BEGIN TO IMAGINE THE
OPPORTUNITIES THE COMPANIES WILL

189
00:11:22,330 --> 00:11:26,630
OPEN UP FOR YOU, YOUR CHILDREN
AND THE WORLD.

190
00:11:26,630 --> 00:11:27,730
>> GEORGE, THANK YOU.
>> THANK YOU, MARK.

191
00:11:27,730 --> 00:11:30,510
>> AND NOW TO THE
REPRESENTATIVES FROM THE AWARDED

192
00:11:30,510 --> 00:11:34,640
LAUNCH SERVICE PROVIDERS, WE'LL
BEGIN FIRST WITH MAUREEN GANNON

193
00:11:34,640 --> 00:11:38,450
THE VICE PRESIDENT FOR BUSINESS
DEVELOPMENT FOR FIREFLY SPACE

194
00:11:38,450 --> 00:11:39,550
SYSTEMS.
MAUREEN?

195
00:11:39,550 --> 00:11:42,860
>> THANKS GEORGE.
GOOD AFTERNOON, HI, EVERYONE.

196
00:11:42,860 --> 00:11:46,810
BEFORE I JUMP IN AND TALK ABOUT
FIREFLY'S SPACE SYSTEMS I WOULD

197
00:11:46,810 --> 00:11:50,620
LIKE TO TAKE A MOMENT TO THANK
NASA FOR MAKING THIS POSSIBLE

198
00:11:50,620 --> 00:11:54,540
THIS EVENT AND FOR THE VENTURE
CLASS LAUNCH SERVICES IN

199
00:11:54,540 --> 00:11:57,750
GENERAL, SO THANK YOU TO THE
VCLS TEAM.

200
00:11:57,750 --> 00:12:01,490
ON BEHALF OF MYSELF, I AM
HONORED TO BE HERE TODAY TO

201
00:12:01,490 --> 00:12:05,620
ACCEPT THE AWARD OF A VENTURE
CLASS CONTRACT ON BEHALF OF

202
00:12:05,620 --> 00:12:10,210
FIREFLY SPACE SYSTEMS.
WE SEE AT FIREFLY SPACE SYSTEMS

203
00:12:10,210 --> 00:12:16,960
VCLS AS A VITAL STEP IN THE MUCH
LARGER VISION OF GROWING NOT

204
00:12:16,960 --> 00:12:22,470
ONLY FIREFLY'S SPACE SYSTEMS BUT
THE SMALL LAUNCH INDUSTRY AS A

205
00:12:22,470 --> 00:12:25,080
WHOLE.
SO LET ME TALK A LITTLE BIT NOW

206
00:12:25,080 --> 00:12:29,399
SPECIFICALLY AROUND FIREFLY.
SO FLYING WAS STARTED IN JUST

207
00:12:29,399 --> 00:12:34,839
JANUARY OF 2014, AND SINCE DAY
ONE, OUR MISSION HAS BEEN TO

208
00:12:34,839 --> 00:12:39,710
DRAMATICALLY REDUCE THE COSTS OF
COMMERCIAL LAUNCH FOR SMALL

209
00:12:39,710 --> 00:12:43,020
SATELLITES AND SCIENCE MISSIONS
IN THE SUB ONE METRIC TON

210
00:12:43,020 --> 00:12:46,279
PAYLOAD CATEGORY.
SINCE I'VE HAD THE HONOR OF

211
00:12:46,279 --> 00:12:51,120
BEING ALSO PART OF FIREFLY SINCE
DAY ONE, I HAVE BEEN ABLE TO

212
00:12:51,120 --> 00:12:55,220
WATCH IT GROW FROM A COMPANY OF
FOUR PEOPLE INTO THE ENTERPRISE

213
00:12:55,220 --> 00:12:58,180
THAT IT HAS BECOME TODAY.
AND I HAVE A VIDEO HERE WITH ME

214
00:12:58,180 --> 00:13:07,320
WE CAN ROLL TO TAKE A LOOK AT
THAT.

215
00:13:07,320 --> 00:13:19,250
\M\M
JANUARY 2014.

216
00:13:19,250 --> 00:13:22,260
AND THE BIRTH OF FIREFLY SPACE
SYSTEMS.

217
00:13:22,260 --> 00:13:31,830
OUR MISSION, TO CHANGE THE GAME
FOR ACCESS TO LOW EARTH ORBIT.

218
00:13:31,830 --> 00:13:32,480
IN JUST 20 MONTHS FIREFLY HAS
COMPLETED KEY DESIGN REVIEWS FOR

219
00:13:32,480 --> 00:13:36,210
OUR ALPHA LAUNCH VEHICLE AND
BUILT PLANE OF THE KEY

220
00:13:36,210 --> 00:13:42,790
COMPONENTS SUCH AS AVIONICS AND
COMPOSITE TANKS.

221
00:13:42,790 --> 00:13:50,310
WE HAVE DESIGNED AND
MANUFACTURED ENGINES AND BUILT

222
00:13:50,310 --> 00:13:57,830
OUR 20,000 SQUARE FOOT R AND D
FACILITY.

223
00:13:57,830 --> 00:14:05,370
WE HAVE COMPLETED OUR FIRST TEST
ON OUR 200 ACRE TEST SITE AND

224
00:14:05,370 --> 00:14:06,839
HOT FIRED OUR ENGINES.
\M\M

225
00:14:06,839 --> 00:14:09,500
FIREFLY WILL LAUNCH NASA
SPACECRAFT TO LOW EARTH ORBIT IN

226
00:14:09,500 --> 00:14:19,040
MARCH OF 2018.
GETTING THINGS DONE.

227
00:14:19,040 --> 00:14:22,220
FIREFLY.
>> GREAT.

228
00:14:22,220 --> 00:14:28,360
WHAT I WOULD LIKE TO ADD TO THAT
IS BEHIND EVERYTHING THAT YOU

229
00:14:28,360 --> 00:14:31,910
SAW THERE, EVERY MILESTONE,
EVERY COMPONENT IS A HUMAN

230
00:14:31,910 --> 00:14:36,130
BEING, A PART OF OUR TEAM, WHICH
IS THE MOST VALUABLE ASSET OF

231
00:14:36,130 --> 00:14:39,520
FIREFLY'S SPACE SYSTEM AND
WITHOUT THEM, WE WOULDN'T BE

232
00:14:39,520 --> 00:14:42,399
HERE TODAY.
FOR THE LAST 20 MONTHS, THEY

233
00:14:42,399 --> 00:14:45,640
HAVE WORKED TIRELESSLY ON
DEVELOPING OUR FIRST VEHICLE,

234
00:14:45,640 --> 00:14:50,600
THE ALPHA, TWO-STAGE ALL
COMPOSITE ROCKET CAPABLE OF

235
00:14:50,600 --> 00:14:55,100
DELIVERING UP TO 400 KILOS TO
LEO AND WE THINK IT WILL BE

236
00:14:55,100 --> 00:14:56,680
UNLIKE ANYTHING THAT'S COME
BEFORE IT.

237
00:14:56,680 --> 00:15:00,830
WE'RE VERY EXCITED ABOUT PIT IT.
THAT'S WHERE WE'RE AT NOW AND

238
00:15:00,830 --> 00:15:06,029
LOOKING INTO THE FUTURE IN 201
WE WILL START OUR SERIES OF

239
00:15:06,029 --> 00:15:09,680
TESTS, SUBORBITAL FLIGHTS FROM
RIGHT HERE AT KENNEDY SPACE

240
00:15:09,680 --> 00:15:13,649
CENTER UNDER AN AGREEMENT WE
HAVE RECENTLY INKED WITH SPACE

241
00:15:13,649 --> 00:15:15,950
FLORIDA.
WE'RE VERY, VERY EXCITED ABOUT

242
00:15:15,950 --> 00:15:18,529
THAT AS WELL.
SO AT THAT TIME WE'LL BE PROUD

243
00:15:18,529 --> 00:15:22,649
TO CALL OURSELVES FLORIDIANS AND
SIGNAL TO THE WORLD THAT THE

244
00:15:22,649 --> 00:15:27,750
MOST EXCITING AND INNOVATIVE
TECHNOLOGIES IN SPACE ACCESS ARE

245
00:15:27,750 --> 00:15:30,390
STILL HAPPENING RIGHT HERE ON
THE SPACE COAST.

246
00:15:30,390 --> 00:15:34,730
THEN IN 2018, OUR COMPANY WILL
BEGIN LAUNCHING ORBITAL

247
00:15:34,730 --> 00:15:37,290
MISSIONS.
EVENTUALLY RAMPING UP TO 50

248
00:15:37,290 --> 00:15:40,290
MISSIONS PER YEAR.
SO THAT MEANS WE WILL BE

249
00:15:40,290 --> 00:15:45,820
OFFERING WEEKLY SCHEDULED ACCESS
TO LEO AND ALLOWING CUSTOMERS

250
00:15:45,820 --> 00:15:49,540
SUCH AS NASA TO PICK AND CHOOSE
THE FLIGHTS THAT WORK BEST FOR

251
00:15:49,540 --> 00:15:52,820
THEM, THAT FIT THEIR MISSION,
AND THEIR SCHEDULE, SO THEY NO

252
00:15:52,820 --> 00:15:57,680
LONGER HAVE TO FLY COACH.
SO WITH THAT SAID, WE WOULD†--

253
00:15:57,680 --> 00:16:00,360
WE'RE GREATLY ENCOURAGED KNOWING
THAT NASA SHARES OUR INDUSTRY'S

254
00:16:00,360 --> 00:16:04,720
VISION IN LOW-COST BOOSTERS TO
ENABLE EVEN MORE EXCITING AND

255
00:16:04,720 --> 00:16:09,899
LESS EXPENSIVE MISSIONS IN
EXPLORATION SCIENCE AND

256
00:16:09,899 --> 00:16:13,330
EDUCATION.
SO NASA'S VOTE OF CONFIDENCE IN

257
00:16:13,330 --> 00:16:17,380
OUR TEAM AND OUR TECHNOLOGY IS A
SIGNIFICANT BOOST TO OUR EFFORTS

258
00:16:17,380 --> 00:16:21,000
AND OUR GOALS AT FIREFLY OF
MAKING SPACE FOR EVERYONE.

259
00:16:21,000 --> 00:16:22,260
THANKS VERY MUCH.
GEORGE?

260
00:16:22,260 --> 00:16:25,910
>> THANK YOU, MAUREEN.
AND NOW TO PETER BECK, THE CHIEF

261
00:16:25,910 --> 00:16:28,510
EXECUTIVE OFFICER OF ROCKET LAB
USA.

262
00:16:28,510 --> 00:16:30,130
PETER?
>> THANK YOU, GEORGE.

263
00:16:30,130 --> 00:16:33,170
SO THIS IS A VERY EXCITING TIME
IN SPACE RIGHT NOW.

264
00:16:33,170 --> 00:16:36,200
IN THE LAST FEW YEARS WHAT WE'VE
SEEN IS MORE SATELLITES DECREASE

265
00:16:36,200 --> 00:16:40,649
IN MASS BY AN AVERAGE OF 75%.
THE MISSIONS THAT WERE TYPICALLY

266
00:16:40,649 --> 00:16:44,390
DONE BY A SATELLITE THE SIZE OF
A CAR ARE NOW DONE BY SATELLITES

267
00:16:44,390 --> 00:16:46,850
THE SIZE OF A REFRIGERATOR OR
EVEN SMALLER.

268
00:16:46,850 --> 00:16:50,089
BUT, OF COURSE, WHAT'S REQUIRED
TO ENABLE THESE MISSIONS IS A

269
00:16:50,089 --> 00:16:54,220
SMALL DEDICATED LAUNCH VEHICLE.
AND WHAT YOU SEE HERE IS NOT

270
00:16:54,220 --> 00:16:56,779
ONE, BUT THREE COMMERCIAL
COMPANIES ALL STRIVING TO

271
00:16:56,779 --> 00:17:00,029
PROVIDE THAT SERVICE.
AND NASA IN TURN ARE ENABLING

272
00:17:00,029 --> 00:17:03,680
THAT SERVICE BY THIS VENTURE
CLASS PROGRAM.

273
00:17:03,680 --> 00:17:07,360
IT'S A TESTAMENT TO NASA'S
VISION FOR THE FUTURE, TO INVEST

274
00:17:07,360 --> 00:17:11,819
IN SOMETHING THIS EARLY AND
IT'S, YOU KNOW, TRULY FANTASTIC.

275
00:17:11,819 --> 00:17:15,370
NOW, ROCKET LAB USA IS PRETTY
FAR ALONG WITH THE LAUNCH

276
00:17:15,370 --> 00:17:19,350
VEHICLE, OUR FIRST TEST FLIGHT
IS SCHEDULED FOR EARLY FLEX YEAR

277
00:17:19,350 --> 00:17:22,650
AND WE'LL BE FLYING A NASA
MISSION ON FLIGHT 5, WHICH IS

278
00:17:22,650 --> 00:17:28,620
LATE 2016, EARLY 2017.
ELECTRON LIFTS AROUND 150

279
00:17:28,620 --> 00:17:37,429
KILOGRAMS TO 500 KILOMETER ORBIT
OR FEW HUNDRED KILOGRAMS.

280
00:17:37,429 --> 00:17:39,590
COST IS ONLY HALF OF THE PROBLEM
HERE.

281
00:17:39,590 --> 00:17:43,350
THE OTHER HALF, OF COURSE, IS
BEING ABLE TO FLY FREQUENTLY AND

282
00:17:43,350 --> 00:17:46,110
BE ABLE TO FLY ON SCHEDULE.
AND ROCKET LAB HAS GONE TO

283
00:17:46,110 --> 00:17:48,640
EXTREME EFFORTS TO ENSURE THAT
THERE IS A REALITY.

284
00:17:48,640 --> 00:17:52,340
IN FACT, WE'VE GONE TO OTHER
COUNTRIES TO BUILD LAUNCH SITES

285
00:17:52,340 --> 00:17:55,270
TO ENABLE THAT AND TO ENABLE OUR
CUSTOMERS TO CHOOSE FROM JUST

286
00:17:55,270 --> 00:17:58,490
ABOUT ANY INCLINATION THEY NEED
AND TO BE ABLE TO MEET THE

287
00:17:58,490 --> 00:18:01,540
SCHEDULE THEY NEED AND TRULY BE
ABLE TO FLY WEEKLY.

288
00:18:01,540 --> 00:18:04,750
NOW YOU'VE PROBABLY SEEN AT LOT
OF HARDWARE FROM ROCKET LAB OVER

289
00:18:04,750 --> 00:18:07,730
THE LAST COUPLE YEARS, BUT WE
REALLY THOUGHT IT WAS TIME THAT

290
00:18:07,730 --> 00:18:11,010
YOU SAW SOME OF THE TEAM BEHIND
ROCKET LAB WHO MAKE THIS HAPPEN.

291
00:18:11,010 --> 00:18:16,080
IF YOU CAN ROLL THAT VIDEO, THAT
WOULD BE GREAT.

292
00:18:16,080 --> 00:18:19,230
THANKS.
>> THROUGHOUT HISTORY, PEOPLE

293
00:18:19,230 --> 00:18:23,440
HAVE CREATED A LOT OF THINGS,
BUT NOW AND AGAIN, SOMETHING IS

294
00:18:23,440 --> 00:18:26,679
CREATED THAT IN ITSELF IS GREAT
BUT WHAT IT HAS ENABLED IS TRULY

295
00:18:26,679 --> 00:18:30,500
EXTRAORDINARY.
AT ROCKET LAB FOR THE LAST EIGHT

296
00:18:30,500 --> 00:18:32,900
YEARS, WE HAVE BEEN KNOWN FOR
THE INNOVATIVE TECHNOLOGY WE

297
00:18:32,900 --> 00:18:36,030
CREATE, BUT WHICH EVER PIECE OF
TECHNOLOGY YOU LOOK AT THAT WAS

298
00:18:36,030 --> 00:18:39,880
CREATED HERE THERE WAS ALWAYS A
ROCKET LAB PERSON BEHIND US.

299
00:18:39,880 --> 00:18:44,130
WE THOUGHT IT WAS ABOUT TIME
THAT YOU GOT TO KNOW THE TEAM

300
00:18:44,130 --> 00:18:54,640
WHO ARE DEDICATED TO MAKING IT
HAPPEN.

301
00:18:54,640 --> 00:19:12,679
PEOPLE WHO DREAM IT, WHO DESIGN
IT, WHO BUILD IT, AND WHO FLY

302
00:19:12,679 --> 00:19:18,799
IT.
SO THIS IS US.

303
00:19:18,799 --> 00:19:26,150
\M\M
AND THENS THERE'S YOU USING

304
00:19:26,150 --> 00:19:32,160
SPACE TO IMPROVE TECHNOLOGIES TO
LIFE ON OUR PLANET AND BEYOND.

305
00:19:32,160 --> 00:19:42,919
NOW IT'S YOUR TURN TO USE IT TO
DO SOMETHING EXTRAORDINARY.

306
00:19:42,919 --> 00:19:47,549
>> SO WHAT ROCKET LAB IS ABOUT,
IS ENABLING SMALL SATELLITES TO

307
00:19:47,549 --> 00:19:51,870
DO REALLY IMPORTANT THINGS THAT
AFFECTS US ALL AND WE'RE JUST SO

308
00:19:51,870 --> 00:19:56,360
EXCITED AND HONORED REALLY TO BE
ABLE TO FLY THESE NASA MISSIONS

309
00:19:56,360 --> 00:19:59,980
AND SEE WHAT EXTRAORDINARY
THINGS IN SCIENCE AND INNOVATION

310
00:19:59,980 --> 00:20:03,140
NASA IS GOING TO DO WITH THIS
LAUNCH VEHICLE.

311
00:20:03,140 --> 00:20:07,429
SO, YOU KNOW, WE'RE JUST SO
EXCITED TO BE ABLE TO GIVE A

312
00:20:07,429 --> 00:20:10,430
FIRST-CLASS RIDE, FIRST.
THANK YOU.

313
00:20:10,430 --> 00:20:14,980
>> THANK YOU, PETER.
AND OUR NEXT WINNER IS STEVE

314
00:20:14,980 --> 00:20:18,280
ISAKOWITZ, THE PRESIDENT OF
VIRGIN GALACTIC.

315
00:20:18,280 --> 00:20:21,030
STEVE?
>> THANK YOU, GEORGE.

316
00:20:21,030 --> 00:20:24,740
AND THANK YOU, NASA.
MY HAT GOES OFF TO THE PEOPLE AT

317
00:20:24,740 --> 00:20:27,429
NASA BECAUSE I KNOW ANY TIME YOU
START A NEW PROGRAM IF

318
00:20:27,429 --> 00:20:30,470
WASHINGTON IS A CHALLENGE THESE
DAYS AND REALLY APPRECIATE THE

319
00:20:30,470 --> 00:20:33,340
EFFORT THAT'S GONE IN FOR THIS
NEW INNOVATIVE PROGRAM THAT'S

320
00:20:33,340 --> 00:20:37,179
NOT ONLY GOING TO UNLEASH THE
REVOLUTION CREATED BY SMALL SATS

321
00:20:37,179 --> 00:20:41,150
BUT HOW WE CONTACT BUSINESS AND
HOW WE WORK WITH NASA.

322
00:20:41,150 --> 00:20:45,179
THANK YOU FOR THAT.
AT VIRGIN GALACTIC, OUR MISSION

323
00:20:45,179 --> 00:20:47,440
IS DRIVEN BY DEMOCRATIZING
SPACE.

324
00:20:47,440 --> 00:20:51,090
IN SHORT WE'RE TRYING TO OPEN UP
THE SPACE FRONTIER TO ALL.

325
00:20:51,090 --> 00:20:54,510
WE'VE DONE IT IN TWO FORMS.
ONE IS OUR SPACESHIP EFFORT

326
00:20:54,510 --> 00:20:58,700
WHERE TO DATE, 551 PEOPLE HAVE
HAD THE OPPORTUNITY TO GO TO

327
00:20:58,700 --> 00:21:02,610
SPACE, MANY OF THEM HERE AT THE
KENNEDY SPACE CENTER, AND AT

328
00:21:02,610 --> 00:21:05,400
VIRGIN GALACTIC, WE HOPE TO
EXCEED THAT NUMBER WITH THE KIND

329
00:21:05,400 --> 00:21:08,230
OF PEOPLE THAT WANT TO ALSO HAVE
THE OPPORTUNITY TO EXPERIENCE

330
00:21:08,230 --> 00:21:11,720
SPACE.
NASA HAS ALSO CONTRIBUTED TO OUR

331
00:21:11,720 --> 00:21:13,540
EFFORTS.
ONE OF THE THINGS WE TRY TO

332
00:21:13,540 --> 00:21:16,590
ACHIEVE IN THE SPACESHIP PROGRAM
IS TO PROVIDE EXPERIMENTS FOR

333
00:21:16,590 --> 00:21:18,760
PEOPLE WHO USED TO FLY IN THE
SPACE SHUTTLE TO HAVE THE

334
00:21:18,760 --> 00:21:21,380
OPPORTUNITY TO FLY THEIR
EXPERIMENTS INTO SUBORBITAL

335
00:21:21,380 --> 00:21:24,380
ENVIRONMENT AND NASA CREATED THE
FLIGHT OPPORTUNITIES PROGRAM TO

336
00:21:24,380 --> 00:21:27,970
ENABLE THAT.
NOW OUR SECOND PRODUCT IS THE

337
00:21:27,970 --> 00:21:31,000
LAUNCHER 1 EFFORT, AND THERE
AGAIN, NASA HAS COME THROUGH

338
00:21:31,000 --> 00:21:34,270
WITH THIS VENTURE CLASS LAUNCH
SYSTEM WHICH IS A GREAT

339
00:21:34,270 --> 00:21:37,490
OPPORTUNITY TO FACILITATE WHAT
THE PRIVATE SECTOR IS INVESTING

340
00:21:37,490 --> 00:21:41,120
ITS MONEY IN.
THE REVOLUTION SMALL SATS IS

341
00:21:41,120 --> 00:21:44,650
EXCITING.
LAST WEEK I HAD A CHANCE TO

342
00:21:44,650 --> 00:21:47,140
VISIT A UNIVERSITY AND MEET WITH
SOME OF THE UNDERGRADS THAT WERE

343
00:21:47,140 --> 00:21:49,799
HAVING AN OPPORTUNITY TO WORK ON
CUBE SAT SATELLITES.

344
00:21:49,799 --> 00:21:53,660
WHAT WAS PARTICULARLY EXCITING
THEY WERE DOING IT NOT JUST AS

345
00:21:53,660 --> 00:21:56,950
AN ACADEMIC EXERCISE, THEY WERE
DOING THAT WITH THE THOUGHT THAT

346
00:21:56,950 --> 00:21:59,970
BEFORE THEY GRADUATE THEY WOULD
HAVE THE OPPORTUNITY TO SEE IT

347
00:21:59,970 --> 00:22:01,679
FLY.
MOREOVER, DURING THE SAME VISIT

348
00:22:01,679 --> 00:22:03,870
I HAD A CHANCE TO MEET WITH SOME
OF THE STUDENTS THAT HAD

349
00:22:03,870 --> 00:22:07,440
RECENTLY GRADUATED FROM THAT
PLACE AND THEY WERE STARTING UP

350
00:22:07,440 --> 00:22:10,400
THEIR OWN SMALL SAT COMPANIES
WITH NEW TECHNOLOGIES TO CHANGE

351
00:22:10,400 --> 00:22:13,860
HOW THESE SMALL SATELLITES ARE
BUILT AND NEW APPLICATIONS ON

352
00:22:13,860 --> 00:22:17,290
HOW THEY ARE USED.
IN THE PRIVATE SECTOR WE'RE

353
00:22:17,290 --> 00:22:19,590
SEEING THIS IS NOT JUST THE
PLAYGROUND OF PEOPLE WHO ARE

354
00:22:19,590 --> 00:22:22,169
INTERESTED IN THE TECHNOLOGY BUT
THIS IS REAL BUSINESS.

355
00:22:22,169 --> 00:22:27,309
WE FIND OURSELVES WITH PRIVATE,
INSTITUTIONAL AND VENTURE CLASS

356
00:22:27,309 --> 00:22:31,380
INVESTORS PUTTING SERIOUS MONEY
TO SEE THAT THIS HAPPENS.

357
00:22:31,380 --> 00:22:35,830
WE ARE SUPER THRILLED THAT NASA
HAS NOW JOINED THIS.

358
00:22:35,830 --> 00:22:39,440
OUR INITIAL FLIGHTS HAVE ALREADY
BEEN BOOKED AS WE SIGNED A MAJOR

359
00:22:39,440 --> 00:22:44,120
CONTRACT JUST A COUPLE MONTHS
AGO, ANNOUNCED TO FLY COMMERCIAL

360
00:22:44,120 --> 00:22:47,280
COMMUNICATION SATELLITES IN THE
SMALL SAT CLASS HAS PROVIDED US

361
00:22:47,280 --> 00:22:49,940
AN IMPORTANT START ON OUR
EFFORTS.

362
00:22:49,940 --> 00:22:54,490
NOW NASA IS JOINING OUR
MANIFEST.

363
00:22:54,490 --> 00:22:57,480
BEFORE I GO TO THE VIDEO, I JUST
WANT TO HIGHLIGHT A FEW OF THE

364
00:22:57,480 --> 00:23:00,960
WORDS THAT WE'RE GOING TO PUT IN
OUR VIDEO THAT I WANT TO MAKE

365
00:23:00,960 --> 00:23:05,110
SURE THEY DON'T GO BY TOO FAST.
AS YOU HEARD TODAY DEDICATED IS

366
00:23:05,110 --> 00:23:07,770
EXTREMELY IMPORTANT TO ENABLING
THIS CLASS OF PAYLOADS.

367
00:23:07,770 --> 00:23:12,650
WE HAVE GONE TOO LONG WITH SMALL
PAYLOADS HAVING TO BE SECONDARY

368
00:23:12,650 --> 00:23:15,860
AND HAVING TO WAIT FOR WHEN THEY
HAVE THE OPPORTUNITY TO FLY OR

369
00:23:15,860 --> 00:23:18,230
GETTING TO THE ORBIT THEY WANT
TO GO.

370
00:23:18,230 --> 00:23:21,020
WHEN AND WHERE IS EXTREMELY
IMPORTANT.

371
00:23:21,020 --> 00:23:23,650
RESPONSIVE.
THIS IS LOOKING THROUGH THE EYES

372
00:23:23,650 --> 00:23:26,260
OF THE CUSTOMER AND SOMETHING WE
TAKE VERY SERIOUS.

373
00:23:26,260 --> 00:23:29,120
WHAT ARE THE IMPEDIMENTS THAT
WOULD ENABLE EMERGING FIELD OF

374
00:23:29,120 --> 00:23:32,090
SMALL SATELLITES.
THE ABILITY TO GO TO THE ORBIT

375
00:23:32,090 --> 00:23:35,720
YOU WANT TO GO TO FOR MULTIPLE
LOCATIONS.

376
00:23:35,720 --> 00:23:39,929
THIS IS WHERE WE THROUGH OUR AIR
LAUNCH DESIGN HAVE COME UP WITH

377
00:23:39,929 --> 00:23:43,480
AN APPROACH THAT GIVES YOU THE
FLEXIBILITY THAT ALLOWS YOU TO

378
00:23:43,480 --> 00:23:47,530
GO ANYWHERE YOU WANT TO GO WHEN
YOU WANT TO GO.

379
00:23:47,530 --> 00:23:50,480
WE ARE FULLY FUNDED WHICH MEANS
WE IS HAVE MADE THE INVESTMENT

380
00:23:50,480 --> 00:23:53,250
COMMITMENT TO TAKE US THROUGH
OUR DEVELOPMENT PROGRAM AND INTO

381
00:23:53,250 --> 00:23:56,910
OUR TEST PROGRAM SO WE CAN BEGIN
OPERATIONS.

382
00:23:56,910 --> 00:23:59,530
WITH THIS, WE'VE USED IT AS AN
OPPORTUNITY TO REALLY THINK

383
00:23:59,530 --> 00:24:03,630
THROUGH FROM THE GET-GO WHAT A
GOOD, CLEAN DESIGN IS TO MAKE

384
00:24:03,630 --> 00:24:06,309
SURE YOU CAN BUILD AN
AFFORDABLE, FAST AND FLEXIBLE

385
00:24:06,309 --> 00:24:09,080
LAUNCH SYSTEM.
SECOND WE'VE MADE A MAJOR

386
00:24:09,080 --> 00:24:12,799
INVESTMENT IN OUR PEOPLE.
TODAY WE HAVE 150 PEOPLE AND WE

387
00:24:12,799 --> 00:24:15,620
ARE STILL GROWING, ADDING PEOPLE
TO THE RANKS WHO BRING A

388
00:24:15,620 --> 00:24:18,410
FANTASTIC EXPERIENCE BASE.
IN FACT, IF YOU LOOK AT OUR

389
00:24:18,410 --> 00:24:21,679
CURRENT TEAM, OUR TEAM HAS
WORKED ON JUST ABOUT EVERY U.S.

390
00:24:21,679 --> 00:24:23,510
LAUNCH SYSTEM THAT IS FLYING
TODAY.

391
00:24:23,510 --> 00:24:26,720
MOREOVER, WE HAVE ALSO HIRED
PEOPLE FROM OUTSIDE THE INDUSTRY

392
00:24:26,720 --> 00:24:30,850
TO BRING NEW IDEAS IN HOW WE CAN
DO THINGS BETTER AND FASTER.

393
00:24:30,850 --> 00:24:34,130
WE'VE ALSO MADE A MAJOR
INVESTMENT IN OUR FACILITIES.

394
00:24:34,130 --> 00:24:36,970
WE JUST MOVED INTO A BRAND NEW
FACILITY A FEW MONTHS AGO IN

395
00:24:36,970 --> 00:24:40,970
LONG BEACH.
150,000 SQUARE FOOT FACILITY

396
00:24:40,970 --> 00:24:43,640
WE'RE STARTING TO OUTFIT IT WITH
START OF THE ART MACHINING AND

397
00:24:43,640 --> 00:24:49,140
TOOLS THAT ALLOWS US TO DO 3D
MANUFACTURING.

398
00:24:49,140 --> 00:24:52,860
LASTLY WE ARE ACHIEVING SOME
VERY IMPRESSIVE RESULTS.

399
00:24:52,860 --> 00:24:55,150
TOO NUMEROUS TO GO THROUGH HERE
BUT LAST WEEK WE HAD THE

400
00:24:55,150 --> 00:24:58,789
OPPORTUNITY TO FIRE OUR FIRST
STAGE ENGINE FOR 90 SECONDS AND

401
00:24:58,789 --> 00:25:01,419
IT PROVIDED US JUST THE RESULTS
THAT WE EXPECTED TO SEE AT THIS

402
00:25:01,419 --> 00:25:04,770
POINT IN TIME AND KUDOS TO THE
TEAM THAT HELPED BRING THAT

403
00:25:04,770 --> 00:25:12,690
TOGETHER.
SO WITH THAT, LET'S ROLL THE

404
00:25:12,690 --> 00:25:24,690
VIDEO.
\M\M

405
00:26:00,690 --> 00:25:36,690
\M\M

406
00:26:00,690 --> 00:26:36,690
>> THANK YOU, GEORGE.
BACK TO YOU.

407
00:26:36,690 --> 00:26:56,120
>> THANK YOU, STEVE.
AND WE'RE READY NOW TO TAKE

408
00:26:56,120 --> 00:26:58,870
QUESTIONS.
WE'LL BEGIN FIRST WITH NEWS HERE

409
00:26:58,870 --> 00:27:04,320
IN THE ROOM AND THEN WE'LL GO TO
THE TELEPHONES FOR MEDIA OFFSITE

410
00:27:04,320 --> 00:27:08,320
ASKING QUESTIONS AND THEN WE'LL
TAKE SOCIAL MEDIA QUESTIONS,

411

00:27:08,320 --> 00:27:12,530
WHICH YOU CAN PARTICIPATE IN BY
GOING TO #ASKNASA.

412
00:27:12,530 --> 00:27:17,990
WE'LL START FIRST HERE AT THE
KENNEDY SPACE CENTER.

413
00:27:17,990 --> 00:27:19,210
JAMES?
>> THANKS GEORGE.

414
00:27:19,210 --> 00:27:23,360
JAMES DANE, FLORIDA, TODAY.
I'M INTERESTED IN A POTENTIAL

415
00:27:23,360 --> 00:27:27,659
FROM LAUNCHES HERE AT KSC.
THANK YOU, MAUREEN, FOR STEPPING

416
00:27:27,659 --> 00:27:30,720
UP TO START IT OFF THERE.
COULD YOU CLARIFY, AS YOU

417
00:27:30,720 --> 00:27:33,190
MENTIONED AN AGREEMENT WITH
SPACE FLORIDA, DOES THAT MEAN

418
00:27:33,190 --> 00:27:37,530
WOULD YOU BE USING 39 C OR A
DIFFERENT SITE FOR YOUR LAUNCH

419
00:27:37,530 --> 00:27:40,480
AND DOES THAT†-- WILL THAT
INCLUDE YOUR NASA LAUNCHES AT

420
00:27:40,480 --> 00:27:44,110
JUST THE SUBORBITAL TEST FLIGHTS
YOU MENTIONED YOU'RE STARTING

421

00:27:44,110 --> 00:27:46,549
WITH?
>> FOR NOW I CAN SAY IT WILL BE

422
00:27:46,549 --> 00:27:52,530
OUR SUBORBITAL TEST FLIGHTS AND
WE ARE AIMING FOR 39 C.

423
00:27:52,530 --> 00:27:55,659
>> AND FOR THE OTHER GUYS, I
UNDERSTAND YOU CAN DO THIS FROM

424
00:27:55,659 --> 00:27:59,860
DIFFERENT PLACES BUT ARE YOU
COMMITTING AT ALL, DO YOU EXPECT

425
00:27:59,860 --> 00:28:06,280
TO LAUNCH YOUR VEHICLES FROM THE
SPACE COAST OR, YOU KNOW, MARK,

426
00:28:06,280 --> 00:28:10,500
I DON'T KNOW IF THE MISSIONS
WILL NECESSITATE DIFFERENT

427
00:28:10,500 --> 00:28:11,490
LAUNCH SITES ALONG THE WAY HOW
THAT'S GOING TO WORK?

428
00:28:11,490 --> 00:28:15,419
>> THE REQUIREMENT WE PUT OUT
FOR THEM WAS THAT THEY COULD

429
00:28:15,419 --> 00:28:20,380
LAUNCH FROM ANYWHERE.
THERE WAS NO SPECIFIC BIAS, BUT

430
00:28:20,380 --> 00:28:21,789
WE'RE LETTING THAT BE UP TO
THEM.

431

00:28:21,789 --> 00:28:23,919
WE GAVE THEM A RANGE OF
INCLINATIONS THEY COULD LAUNCH

432
00:28:23,919 --> 00:28:27,159
FROM WHICH OPENS UP KENNEDY AND
OTHER OPTIONS.

433
00:28:27,159 --> 00:28:29,710
I'LL LET THEM SPEAK FOR
THEMSELVES.

434
00:28:29,710 --> 00:28:31,970
>> FROM OUR ROCKET LAB
PERSPECTIVE WE HAVE SIGNED A

435
00:28:31,970 --> 00:28:36,150
NASA SPACE LAUNCH ACT AGREEMENT
AND WE ARE IN DISCUSSIONS WITH

436
00:28:36,150 --> 00:28:38,700
THE CAPE HERE FOR THE USE OF 39
C.

437
00:28:38,700 --> 00:28:42,280
39 C JUST GIVES US THAT NICE
LITTLE SWEET SPOT OF INCLINATION

438
00:28:42,280 --> 00:28:46,020
WE CANS GET OUT†-- CAN'T GET OUT
OF SOME OF THE OTHER SITES WE

439
00:28:46,020 --> 00:28:48,450
HAVE SO WE'RE DEFINITELY
PURSUING IT.

440
00:28:48,450 --> 00:28:51,440
>> FOR VIRGIN GALACTIC WE HAVE
FLEXIBLE GIVEN THAT WE ARE AIR

441

00:28:51,440 --> 00:28:54,530
LAUNCHED.
OUR PLAN IS TO START THE PROGRAM

442
00:28:54,530 --> 00:28:58,460
FOR OURSELVES IN MOHAVE OUT IN
VIRGINIA, BUT WE HAVE THE

443
00:28:58,460 --> 00:29:03,840
ABILITY TO USE THE LANDING SITE
FOR OUR OWN FLIGHTS OUT OF THE

444
00:29:03,840 --> 00:29:05,960
CAPE.
>> ALL RIGHT.

445
00:29:05,960 --> 00:29:08,230
ANY OTHER QUESTIONS HERE IN THE
ROOM?

446
00:29:08,230 --> 00:29:10,690
>> THIS IS A COMPETITION.
DARYL, FOX 35 IN ORLANDO.

447
00:29:10,690 --> 00:29:12,360
YOU MENTIONED THIS IS A
COMPETITION.

448
00:29:12,360 --> 00:29:15,409
IS THERE A SECOND ROUND TO THIS
AND DOES THAT COME WITH A LEVEL

449
00:29:15,409 --> 00:29:19,499
OF FUNDING AND DO YOU NARROW
DOWN THE FIELD THAT WE SEE HERE?

450
00:29:19,499 --> 00:29:22,480
>> SO THE WAY WE SET IT UP WAS
TO GO OUT AND BUY A COMMERCIAL

451

00:29:22,480 --> 00:29:24,960
LAUNCH SERVICE SO IT WAS SIMPLY
ONE ROUND.

452
00:29:24,960 --> 00:29:27,720
WE'VE GOT MILESTONES IN OUR
CONTRACT THAT HELP US WALK THESE

453
00:29:27,720 --> 00:29:31,159
PROVIDERS THROUGH THE DESIGN
PROCESS, TEST PROGRAM AND THEN

454
00:29:31,159 --> 00:29:34,510
THE FINAL LAUNCH INTEGRATION.
WE DON'T HAVE AN OPTION IN THERE

455
00:29:34,510 --> 00:29:38,360
TO GO BY ADDITIONAL FLIGHTS BUT
ALLOWING THEM TO COMPETE IN THE

456
00:29:38,360 --> 00:29:42,049
DEMONSTRATION FLIGHT PHASE IT
KIND OF OPENS THE DOOR FOR US TO

457
00:29:42,049 --> 00:29:44,309
LOOK AT THEIR MATURITY AND HAVE
THEM OUT THERE AS AN AVAILABLE

458
00:29:44,309 --> 00:29:47,970
OPTION FOR THE SCIENCE COMMUNITY
AS THEY GROW AT LOOKING AT USING

459
00:29:47,970 --> 00:29:54,299
THIS CLASS OF LAUNCH SERVICES.
>> WITH FIREFLY, WHAT KIND OF

460
00:29:54,299 --> 00:29:57,370
LAUNCH CAN WE EXPECT TO SEE FROM
THE SPACE COAST HERE?

461

00:29:57,370 --> 00:30:02,640
WHAT WILL IT LOOK LIKE?
>> WELL HOPEFULLY SPECTACULAR.

462
00:30:02,640 --> 00:30:07,309
SO IT WILL BE THE TEST FLIGHTS
THAT WE WILL LAUNCH FROM HERE,

463
00:30:07,309 --> 00:30:11,539
WILL HAPPEN IN 2017 AND I GUESS
WHAT DO YOU MEAN BY WHAT DOES†--

464
00:30:11,539 --> 00:30:14,600
WHAT WILL IT LOOK LIKE?
>> IN TERMS OF YOU KNOW A LOT OF

465
00:30:14,600 --> 00:30:16,830
LAUNCH WATCHERS LIKE TO OBSERVE
LAUNCHES OUT HERE, DIFFERENT

466
00:30:16,830 --> 00:30:18,480
CHARACTERISTICS OF DIFFERENT
VEHICLES.

467
00:30:18,480 --> 00:30:22,510
YOURS IS SMALLER WILL THERE BE
THE RUMBLE AND BOOM?

468
00:30:22,510 --> 00:30:27,000
>> THERE WILL BE RUMBLE AND BOOM
AND WORTH STANDING AND LOOKING

469
00:30:27,000 --> 00:30:29,059
UP TO THE SKY AND WATCHING IT
GO.

470
00:30:29,059 --> 00:30:32,799
IT'S GOING TO BE AMAZING, YES.
>> ANY OTHER QUESTIONS HERE IN

471

00:30:32,799 --> 00:30:34,630
THE ROOM?
ALL RIGHT.

472
00:30:34,630 --> 00:30:38,659
LET'S GO TO THE PHONES.
FIRST WE HAVE ON THE LINE JEFF

473
00:30:38,659 --> 00:30:41,700
FAUSH FROM SPACE NEWS.
>> HI.

474
00:30:41,700 --> 00:30:45,280
THANKS FOR DOING THE PRESS
CONFERENCE.

475
00:30:45,280 --> 00:30:49,000
I WANT TO ASK THE NASA
REPRESENTATIVES HERE, IF YOU CAN

476
00:30:49,000 --> 00:30:52,169
EXPLAIN WHAT CRITERIA YOU USED
TO SELECT THESE LAUNCH

477
00:30:52,169 --> 00:30:56,299
PROVIDERS, GIVEN THAT NOBODY SO
FAR HAS ACTUALLY DONE ANY

478
00:30:56,299 --> 00:30:59,100
LAUNCHES, WHAT WERE YOU LOOKING
AT TO CHOOSE THESE AND FROM HOW

479
00:30:59,100 --> 00:31:03,490
MANY PROPOSALS DID YOU SELECT
THESE THREE PROVIDERS FROM?

480
00:31:03,490 --> 00:31:06,370
>> HEY, JEFF, THIS IS MARK.
APPRECIATE THE QUESTION.

481

00:31:06,370 --> 00:31:09,440
SO AS OUR TRADITIONAL
ACQUISITION PROCESS GOES, WE

482
00:31:09,440 --> 00:31:12,559
UNFORTUNATELY CAN'T GIVE YOU HOW
MANY BID ON THE CONTRACT AND HOW

483
00:31:12,559 --> 00:31:15,600
MANY WERE THERE, BUT I'LL LET
YOU KNOW THERE IS A FIELD OUT

484
00:31:15,600 --> 00:31:17,900
THERE THAT'S TRYING TO BE THE
FIRST TO BRING A PRODUCT TO

485
00:31:17,900 --> 00:31:20,450
MARKET, SO WE'RE EXCITED WE'RE
ABLE TO AWARD THREE.

486
00:31:20,450 --> 00:31:23,110
IT'S AN OUTSTANDING OPPORTUNITY
FOR US TO GET THAT FIRST PUSH

487
00:31:23,110 --> 00:31:26,470
FOR COMPETITION.
FROM A VALUATION STANDPOINT SO

488
00:31:26,470 --> 00:31:30,360
WE HAD A BALANCE OF COSTS AND
THEIR CAPABILITIES.

489
00:31:30,360 --> 00:31:33,299
FROM THE CAPABILITY SIDE WE
LOOKED AT THE PLANS THEY HAD IN

490
00:31:33,299 --> 00:31:36,020
PLACE, WE ASKED THE PROVIDERS
ALL TO GIVE US A SYSTEMS

491

00:31:36,020 --> 00:31:39,130
REQUIREMENTS REVIEW LEVEL
PACKAGE SO WE COULD UNDERSTAND

492
00:31:39,130 --> 00:31:42,679
HOW MATURE THEY WERE IN THEIR
DEVELOPMENT AND THEN WE KIND OF

493
00:31:42,679 --> 00:31:44,870
LOOKED AT THAT AND BALANCED IT
WITH THE COSTS TO MAKE SURE WE

494
00:31:44,870 --> 00:31:47,559
HAD THE BEST VIABLE SOLUTION
GOING FORWARD SO WE COULD SEE

495
00:31:47,559 --> 00:31:54,860
THIS AS A SUCCESSFUL VENTURE.
>> ALL RIGHT.

496
00:31:54,860 --> 00:31:56,830
STEVEN CLARK FROM SPACE FLIGHT
NOW.

497
00:31:56,830 --> 00:32:01,770
>> HI, THANKS GEORGE.
STEVEN CLARK FROM SPACE FLIGHT

498
00:32:01,770 --> 00:32:04,850
NOW.
JUST A COUPLE QUESTIONS.

499
00:32:04,850 --> 00:32:09,289
FIRST, MAYBE FOR MARK.
FROM THE LAUNCH SERVICES PROGRAM

500
00:32:09,289 --> 00:32:14,760
PERSPECTIVE, GOING FORWARD, ARE
YOU INVOLVED IN, YOU KNOW, YOUR

501

00:32:14,760 --> 00:32:19,140
NORMAL PROCESS INTERVIEWS,
TECHNICAL REVIEWS, GOING UP TO

502
00:32:19,140 --> 00:32:24,460
FLIGHT CERTIFICATION OR ARE YOU
JUST ALONG FOR THE RIDES SINCE

503
00:32:24,460 --> 00:32:28,299
THESE ARE CONSIDERED LOW OR HIGH
RISK TYPE PAYLOADS?

504
00:32:28,299 --> 00:32:31,309
AND ALSO, FOR VIRGIN GALACTIC,
YOU RECENTLY ANNOUNCED YOU'RE

505
00:32:31,309 --> 00:32:35,919
ENLARGING YOUR LAUNCHER ONE
VEHICLE TO CARRY UP MORE PAYLOAD

506
00:32:35,919 --> 00:32:39,840
TO ORBIT.
HAVE YOU SELECTED A NEW CARRIER

507
00:32:39,840 --> 00:32:43,789
AIRCRAFT FOR THAT VEHICLE?
AND WHAT IS THAT?

508
00:32:43,789 --> 00:32:45,929
THANKS.
>> SO APPRECIATE THE QUESTION.

509
00:32:45,929 --> 00:32:48,440
AGAIN, YOU GOT IT RIGHT.
WE'RE DEFINITELY GOING AFTER A

510
00:32:48,440 --> 00:32:51,830
HIGH RISK APPROACH HERE.
SO THE CUBE SATS REPRESENT THAT

511

00:32:51,830 --> 00:32:55,299
HIGH RISK TOLERANT PAYLOAD WHICH
ARE PERFECT FOR DEMONSTRATION OF

512
00:32:55,299 --> 00:32:57,710
A FIRST FLIGHT.
SO FROM THE LAUNCH SERVICE

513
00:32:57,710 --> 00:33:01,260
PROGRAMS PERSPECTIVE WE'RE ALONG
FOR THE RIDE WITH OUR LOW RISK

514
00:33:01,260 --> 00:33:04,620
TOLERANT HIGH VALUE SPACECRAFT.
THIS TIME WE'RE TRYING TO STEP

515
00:33:04,620 --> 00:33:06,730
BACK A LITTLE BIT AND MAKE SURE
THE GOVERNMENT GETS OUT OF THE

516
00:33:06,730 --> 00:33:10,450
WAY, DOESN'T INHIBIT THE
COMMERCIAL SOLUTIONS THESE

517
00:33:10,450 --> 00:33:12,659
COMPANIES ARE TRYING TO BRING
FORWARD, BUT WE'RE GOING TO

518
00:33:12,659 --> 00:33:16,549
DEFINITELY GET INSIGHT SO THAT
WHEN WE DO GO FORWARD AND TRY TO

519
00:33:16,549 --> 00:33:19,659
PROCURE A LAUNCH SERVICE FOR A
LOW RISK TOLERANT SPACECRAFT

520
00:33:19,659 --> 00:33:22,929
WE'RE ONE STEP AHEAD OF THE GAME
WITH TRYING TO CERTIFY THEM TO

521

00:33:22,929 --> 00:33:26,929
MAKE SURE THEY CAN GET US SAFE
ACCESS TO SPACE.

522
00:33:26,929 --> 00:33:27,370
>> THANK YOU.
YEAH.

523
00:33:27,370 --> 00:33:30,140
AS TO YOUR QUESTION ABOUT
INCREASING THE SIZE OF OUR

524
00:33:30,140 --> 00:33:33,460
LAUNCHER ONE, FROM THE GET-GO WE
HAD A DESIGN PHILOSOPHY THAT

525
00:33:33,460 --> 00:33:37,350
LOOKED IT TO HAVE A LAUNCH
VEHICLE THAT WAS EVOLVABLE.

526
00:33:37,350 --> 00:33:40,179
AND AS WE CONTINUE TO STUDY THE
MARKET WE KNEW WE WERE READY TO

527
00:33:40,179 --> 00:33:42,330
RESPOND TO WHAT OUR CUSTOMERS
NEEDED.

528
00:33:42,330 --> 00:33:44,600
IT WAS PRETTY CLEAR TO US THAT
OUR CUSTOMERS WERE LOOKING AT

529
00:33:44,600 --> 00:33:47,960
LAUNCH VEHICLES IN THE SMALL SAT
RANGE, THAT WOULD BE ABOVE SOME

530
00:33:47,960 --> 00:33:51,210
OF THE CAPABILITY WE WERE GOING
TO HAVE IN OUR ORIGINAL DESIGN.

531

00:33:51,210 --> 00:33:53,620
FORTUNATELY WE HAD THE KIND OF
DESIGN THROUGH THE ENGINES WE

532
00:33:53,620 --> 00:33:56,460
WERE BUILDING WITHOUT MAKING ANY
CHANGES TO THE ENGINES

533
00:33:56,460 --> 00:33:59,340
THEMSELVES BUT STRETCHING THE
VEHICLE WE WERE ABLE TO GET A

534
00:33:59,340 --> 00:34:02,960
VEHICLE THAT ESSENTIALLY COULD
DOUBLE ITS PERFORMANCE FOR ABOUT

535
00:34:02,960 --> 00:34:05,140
THE SAME PRICE POINT.
AND THAT'S PRETTY EXCITING TO

536
00:34:05,140 --> 00:34:08,109
OUR CUSTOMERS.
AS A RESULT, WE ARE GOING TO BE

537
00:34:08,109 --> 00:34:11,960
FLYING ON A COMMERCIAL AIRCRAFT
AND WE DO EXPECT IN THE COMING

538
00:34:11,960 --> 00:34:17,500
SHORT WHILE HERE TO ANNOUNCE
EXACTLY WHAT AIRCRAFT WE'LL BE

539
00:34:17,500 --> 00:34:21,200
FLYING ON.
>> OUR NEXT†-- STEVE, DID YOU

540
00:34:21,200 --> 00:34:25,869
HAVE A FOLLOW-UP?
OKAY.

541

00:34:25,869 --> 00:34:26,860
RANDY SHOWSTACK FROM EOS.
RANDY?

542
00:34:26,860 --> 00:34:29,700
>> YES, HELLO, CAN YOU HEAR ME?
>> YES.

543
00:34:29,700 --> 00:34:34,030
LOUD AND CLEAR.
>> YES, THANKS VERY MUCH FOR

544
00:34:34,030 --> 00:34:36,179
DOINGS THIS.
COUPLE QUESTIONS.

545
00:34:36,179 --> 00:34:39,379
FIRST OF ALL, CAN YOU CLARIFY
WHAT WILL BE THE KEY MILESTONES

546
00:34:39,379 --> 00:34:42,950
THAT YOU'LL BE TRACKING WITH
THESE LAUNCH VEHICLES?

547
00:34:42,950 --> 00:34:45,909
>> SO WHAT WE'VE SET UP IN THE
CONTRACT IS WE WILL FOLLOW THESE

548
00:34:45,909 --> 00:34:49,359
PROVIDERS THROUGH THEIR
PRELIMINARY DESIGN, CRITICAL

549
00:34:49,359 --> 00:34:51,070
DESIGN.
WE HAVE A QUALIFICATION TEST

550
00:34:51,070 --> 00:34:55,040
MILESTONE WHERE WE CAN ASK THEM
TO SHOWCASE THEIR MAJOR

551

00:34:55,040 --> 00:34:58,180
TECHNOLOGIES AND THEN WE'LL LOOK
AT THAT DATA, REVIEW THE QUAL

552
00:34:58,180 --> 00:35:04,789
TEST DATA AND WORK THROUGH OUR
TYPICAL CAMPAIGN MILESTONES.

553
00:35:04,789 --> 00:35:07,040
>> TO THE COMPANY
REPRESENTATIVES HOW DO EACH OF

554
00:35:07,040 --> 00:35:09,890
YOU VIEW THE OTHER SELECTED
COMPANIES?

555
00:35:09,890 --> 00:35:16,930
>> WHO WANTS TO GO FIRST?
>> WELL, I MEAN I'LL JUST SAY,

556
00:35:16,930 --> 00:35:20,369
WE'RE VERY EXCITED.
I'M A TRUE BELIEVER IN

557
00:35:20,369 --> 00:35:23,230
COMPETITION AND COMPETITION OF
NEW IDEAS AND I THINK THAT'S

558
00:35:23,230 --> 00:35:25,580
WHAT'S SO GREAT ABOUT THIS
SEGMENT OF THE MARKET WHETHER

559
00:35:25,580 --> 00:35:28,530
IT'S THE SATELLITE COMPANIES
BUILDING THESE NEW SMALL SATS

560
00:35:28,530 --> 00:35:31,140
AND CUBE SATS OR THE LAUNCH
PROVIDERS.

561

00:35:31,140 --> 00:35:32,980
YOU'RE SEEING COMPANIES THAT ARE
COMING AT THIS TO SOLVE PROBLEMS

562
00:35:32,980 --> 00:35:36,160
IN DIFFERENT WAYS AND I THINK
THAT'S HEALTHY.

563
00:35:36,160 --> 00:35:39,849
PERSONALLY, I ACTUALLY APPLAUD
IT EVERY TIME I SEE A LAUNCH

564
00:35:39,849 --> 00:35:42,369
WITH THESE SMALL SATS BEING
DEPLOYED.

565
00:35:42,369 --> 00:35:45,230
SOMETIMES I'M ASKED TO REVIEW
THEM AS COMPETITION AND I VIEW

566
00:35:45,230 --> 00:35:47,520
THAT AS GREAT OPPORTUNITIES TO
SEE THE MARKET GROW BECAUSE I

567
00:35:47,520 --> 00:35:50,210
THINK AS THESE SATELLITES GET
DEMONSTRATED IN ORBIT I THINK

568
00:35:50,210 --> 00:35:53,210
DEMAND WILL GROW FOR THEM.
>> YEAH.

569
00:35:53,210 --> 00:35:56,480
AND I TOTALLY AGREE.
I MEAN, A BIT OF HEALTHY

570
00:35:56,480 --> 00:36:01,330
COMPETITION IS GREAT BUT THERE
IS ALSO ROCKET KARMA AND YOU

571

00:36:01,330 --> 00:36:05,790
NEVER PUT DOWN ANY OTHER ROCKET
COMPANY BECAUSE IT IS A REALLY

572
00:36:05,790 --> 00:36:09,670
HARD THING TO DO, SO, YOU KNOW,
COMPETITION IS GREAT AND WE LOOK

573
00:36:09,670 --> 00:36:13,589
FORWARD TO COMPETING.
>> I WOULD ECHO THE SAME.

574
00:36:13,589 --> 00:36:17,040
I THINK THE COMPETITION IS
FANTASTIC AND WITH THE GROWTH

575
00:36:17,040 --> 00:36:20,619
THAT WE'RE SEEING IN THE MARKET,
I THINK YOU'RE GOING TO SEE, YOU

576
00:36:20,619 --> 00:36:24,140
KNOW, A LOT OF DIFFERENT
COMPANIES THAT ARE GOING TO BE

577
00:36:24,140 --> 00:36:27,800
COMPETING FOR THIS SPACE AS WELL
AND THE MARKET WILL CONTINUE TO

578
00:36:27,800 --> 00:36:30,150
GROW AND WE'LL SEE MORE
COMPETITION.

579
00:36:30,150 --> 00:36:33,950
>> THANK YOU.
>> OUR NEXT QUESTIONER IS CALEB

580
00:36:33,950 --> 00:36:35,430
HENRY FROM VIA SATELLITE
MAGAZINE.

581

00:36:35,430 --> 00:36:35,690
CALEB?
>> HI.

582
00:36:35,690 --> 00:36:37,000
MY QUESTION IS JUST HOW MANY
LAUNCHES DOES NASA ANTICIPATE

583
00:36:37,000 --> 00:36:38,970
NEEDING ONCE THIS PROGRAM IS UP
AND RUNNING AND THEN A QUICK

584
00:36:38,970 --> 00:36:41,130
FOLLOW-UP WOULD BE DO YOU
ANTICIPATE CERTIFYING OTHER

585
00:36:41,130 --> 00:36:54,650
LAUNCH PROVIDERS IN THE FUTURE?
>> SO MAYBE I'LL START.

586
00:36:54,650 --> 00:36:57,810
AGAIN, WE BOUGHT THREE
DEMONSTRATION FLIGHTS.

587
00:36:57,810 --> 00:37:00,540
ONCE IT GETS UP AN RUNNING,
AGAIN, LOOKING TOWARDS THEIR

588
00:37:00,540 --> 00:37:03,450
SUCCESS AND THE FUTURE IT'S THE
SCIENCE COMMUNITY THAT DRIVES

589
00:37:03,450 --> 00:37:05,630
THAT REQUIREMENT.
SO I'LL LET ERIC KIND OF MAYBE

590
00:37:05,630 --> 00:37:08,769
GIVE HIS TAKE FROM OUR SCIENCE
DIVISION STANDPOINT.

591

00:37:08,769 --> 00:37:14,550
>> WELL, FROM AN EARTH SCIENCE
STANDPOINT WE LOOK TO†-- WE HAVE

592
00:37:14,550 --> 00:37:19,460
A VERY REGULAR CADENCE OF
COMPETED MISSIONS THAT WE PUT

593
00:37:19,460 --> 00:37:24,210
OUT THERE.
WE LOOK FOR INSTRUMENTS AND WE

594
00:37:24,210 --> 00:37:31,940
LOOK FOR COMPLETE MISSIONS.
SO OUR INSTRUMENT SOLICITATIONS

595
00:37:31,940 --> 00:37:35,550
GO OUT EVERY 18 MONTHS.
OUR FULL MISSIONS GO OUT EVERY

596
00:37:35,550 --> 00:37:39,750
TWO YEARS.
FROM THAT STANDPOINT, WE LET THE

597
00:37:39,750 --> 00:37:41,900
SCIENCE DRIVE WHAT IT IS THAT
WE'RE LOOKING FOR.

598
00:37:41,900 --> 00:37:45,089
WE'RE NOT NECESSARILY LOOKING TO
FLY CUBE SATS PER SE, BUT WE'RE

599
00:37:45,089 --> 00:37:49,750
LOOKING TO FLY SPECIFIC SCIENCE.
NOW, WHEN A CUBE SAT OR A SMALL

600
00:37:49,750 --> 00:37:51,480
SAT CAN DO THAT SCIENCE, THAT'S
GREAT.

601

00:37:51,480 --> 00:37:54,550
THAT'S WHAT WE'RE LOOKING FOR.
I THINK THERE WILL BE PLENTY OF

602
00:37:54,550 --> 00:38:01,270
OPPORTUNITIES WITHIN THE EARTH
SCIENCE DIVISION ALONE TO FLY ON

603
00:38:01,270 --> 00:38:03,850
THIS TYPE OF LAUNCH VEHICLE INTO
THE FUTURE.

604
00:38:03,850 --> 00:38:07,710
>> ALL RIGHT.
WE'LL TAKE SOME SOCIAL MEDIA

605
00:38:07,710 --> 00:38:12,290
QUESTIONS NOW FROM #ASKNASA.
SO COULD WE HAVE OUR FIRST

606
00:38:12,290 --> 00:38:12,830
QUESTION?
>> RIGHT.

607
00:38:12,830 --> 00:38:16,300
THIS ONE IS AIMED AT THE WHOLE
PANEL REALLY.

608
00:38:16,300 --> 00:38:18,240
COMMERCIAL COMPANIES
SPECIFICALLY.

609
00:38:18,240 --> 00:38:21,130
CAN THESE SMALL SATS ONLY BE
USED FOR SCIENTIFIC RESEARCH OR

610
00:38:21,130 --> 00:38:23,339
COULD THEY BE USED FOR
COMMERCIAL USE SUCH AS TV RADIO

611

00:38:23,339 --> 00:38:28,490
AND INTERNET?
>> I MEAN, I CAN SPEAK FROM

612
00:38:28,490 --> 00:38:32,770
ROCKET LAB'S PERSPECTIVE.
THE MANIFESTO IS LOOKING FULL

613
00:38:32,770 --> 00:38:36,980
AND THE VAST MAJORITY OF THOSE
MISSIONS ARE ALL COMMERCIAL

614
00:38:36,980 --> 00:38:38,609
CUSTOMERS.
CUSTOMERS DOING EARTH

615
00:38:38,609 --> 00:38:42,950
OBSERVATIONS AND COMMUNICATIONS.
YOU KNOW, MOST DEFINITELY THE

616
00:38:42,950 --> 00:38:47,250
COMMERCIAL SMALL SATELLITE GUYS
ARE LEADING THE WAY HERE.

617
00:38:47,250 --> 00:38:49,560
>> YEAH.
I WOULD AGREE WITH THAT.

618
00:38:49,560 --> 00:38:52,599
YOU KNOW WE SEE THE DEMAND
COMING IN COMMUNICATIONS WITH

619
00:38:52,599 --> 00:38:56,130
OUR CUSTOMER, THEY'RE PUTTING UP
A LARGE CONSTELLATION OF SMALL

620
00:38:56,130 --> 00:38:57,609
SATELLITES.
WE SEE A LOT IN EARTH

621

00:38:57,609 --> 00:39:00,560
OBSERVATION.
WE'RE LOOKING AT COMPANIES DOING

622
00:39:00,560 --> 00:39:04,290
SOME INNOVATIVE THINGS THAT ARE
DIFFERENT OUTSIDE THE NORM.

623
00:39:04,290 --> 00:39:07,720
SO WE DO SEE THAT VERY MUCH AS
AN EXPANDING MARKET AND SOME

624
00:39:07,720 --> 00:39:08,520
THINGS WE'RE NOT EVEN THINKING
OF.

625
00:39:08,520 --> 00:39:12,470
SOME OF THE STUFF I'VE SEEN NASA
IS DOING LIKE SENDING A COUPLE

626
00:39:12,470 --> 00:39:16,400
CUBE SATS OFF TO MARS WHO WOULD
HAVE THOUGHT IT A SHORT WHILE

627
00:39:16,400 --> 00:39:19,680
BACK, ALL ENABLED BY TECHNOLOGY
IN THE LAST FEW YEARS THAT MADE

628
00:39:19,680 --> 00:39:22,830
THIS ALL POSSIBLE.
>> I WOULD ECHO THAT AS WELL.

629
00:39:22,830 --> 00:39:25,730
THE MAJORITY OF THE CUSTOMERS
THAT WE ARE TALKING TO MOSTLY

630
00:39:25,730 --> 00:39:29,980
COMMERCIAL, ARE WANTING TO DO
POLAR EARTH OBSERVATION, BUT

631

00:39:29,980 --> 00:39:32,920
THERE'S NOT A DAY THAT DOESN'T
GO BY WHEN I DON'T GET A PHONE

632
00:39:32,920 --> 00:39:37,230
CALL FROM A COMPANY THAT I HAD
NOT HEARD OF BEFORE LOOKING TO

633
00:39:37,230 --> 00:39:41,070
DO SOMETHING THAT ABSOLUTELY
BOGGLES MY MIND.

634
00:39:41,070 --> 00:39:46,349
THERE ARE REALLY INTERESTING
DEVELOPMENTS HAPPENING EVERY

635
00:39:46,349 --> 00:39:49,270
DAY.
>> ANOTHER SOCIAL MEDIA

636
00:39:49,270 --> 00:39:51,839
QUESTION?
>> THIS ONE SAYS, WHEN WILL

637
00:39:51,839 --> 00:39:55,900
ROCKET SHIPS AND OTHER
SPACECRAFT LIKE THESE VEHICLES

638
00:39:55,900 --> 00:40:00,450
BE ABLE TO TAKE PUBLIC TO SPACE?
>> WHERE ARE YOU DOING IT?

639
00:40:00,450 --> 00:40:05,480
WE CAN TELL WHOEVER ASKED THE
QUESTION, SIGN UP FOR A

640
00:40:05,480 --> 00:40:09,240
SPACESHIP RIDE.
>> WE HAVE A FUND MENTAL POLICY

641

00:40:09,240 --> 00:40:12,749
AT ROCKET LAB NOT TO FLY MEAT SO
WE'LL LEAVE THAT.

642
00:40:12,749 --> 00:40:18,700
>> I THINK WE'VE GOT, YOU KNOW,
JUST BY FLYING THE CUBE SATS

643
00:40:18,700 --> 00:40:20,290
WE'RE LETTING THE PUBLIC GET
INTO SPACE.

644
00:40:20,290 --> 00:40:24,160
I HAVE AN 11-YEAR-OLD AT HOME
WORKING ON A SCIENCE PROJECT AND

645
00:40:24,160 --> 00:40:26,810
THE THOUGHT THAT IN ONLY A
COUPLE YEARS, THERE'S SOME

646
00:40:26,810 --> 00:40:29,710
CLASSROOMS ABLE TO DO IT TODAY
THESE KIDS WILL DO SCIENCE

647
00:40:29,710 --> 00:40:32,670
EXPERIMENTS FROM A SATELLITE IN
SPACE VERSUS MESSING UP THE

648
00:40:32,670 --> 00:40:34,780
KITCHEN AT HOME.
I MEAN IT'S†-- THE OPPORTUNITY

649
00:40:34,780 --> 00:40:40,060
IS ALREADY THERE.
>> ANY OTHER QUESTIONS ON THE

650
00:40:40,060 --> 00:40:42,390
SOCIAL MEDIA?
>> ONE MORE.

651

00:40:42,390 --> 00:40:44,000
>> YES.
>> WE TALK ABOUT THE DIFFERENCES

652
00:40:44,000 --> 00:40:47,750
BETWEEN CAPABILITIES AND THE NEW
VENTURE CLASS SYSTEMS COMPARED

653
00:40:47,750 --> 00:40:51,970
TO RIDE SHARES.
>> YOU WANT TO TAKE THAT ONE?

654
00:40:51,970 --> 00:40:56,020
>> IN THE BEGINNING WE DO THE
RIDE SHARES AND IT DEPENDS ON

655
00:40:56,020 --> 00:41:00,140
HOW MUCH EXCESS CAPACITY IS LEFT
FOR US TO USE.

656
00:41:00,140 --> 00:41:03,829
A LOT OF TIMES WHEN A NASA
MISSION IS GOING INTO ORBIT THEY

657
00:41:03,829 --> 00:41:06,599
WANT TO USE AS MUCH PERFORMANCE
OF THE VEHICLE AS THEY CAN TO

658
00:41:06,599 --> 00:41:09,400
ENSURE THEY GET THE MAXIMUM
AMOUNT OF SCIENCE OUT OF IT.

659
00:41:09,400 --> 00:41:12,920
IF THERE WAS AN EXTRA 50
KILOGRAMS ON THE VEHICLE WE PUT

660
00:41:12,920 --> 00:41:15,650
AS MANY AS†-- CUBE SATS AS
POSSIBLE ON THERE.

661

00:41:15,650 --> 00:41:20,020
ON A DELTA II RIGHT NOW WE PUT
THREE, 3 U.

662
00:41:20,020 --> 00:41:23,950
PAYLOADS ABOUT 12 KILOGRAMS
WORTH OF SCIENCE PAYLOADS ON A

663
00:41:23,950 --> 00:41:26,930
VEHICLE TO GO FLY.
NOW, WHEN WE'RE SWITCHING OVER

664
00:41:26,930 --> 00:41:30,070
TO THE VENTURE CLASS WE HAVE THE
OPPORTUNITY TO DO A MINIMUM OF

665
00:41:30,070 --> 00:41:32,030
SIX.
THE REQUIREMENT HAS BEEN EVEN

666
00:41:32,030 --> 00:41:34,180
MORE.
WE'RE LOOKING AT INSTEAD OF

667
00:41:34,180 --> 00:41:42,150
DOING THREE 3 Us WE'RE LOOKING
AT 50 TO 30†3s ON A PARTICULAR

668
00:41:42,150 --> 00:41:42,720
MISSION.
>> ALL RIGHT.

669
00:41:42,720 --> 00:41:46,849
LET'S DO ONE MORE.
HERE IN THE ROOM, ANY FURTHER

670
00:41:46,849 --> 00:41:48,460
QUESTIONS?
DARYL?

671

00:41:48,460 --> 00:41:52,550
>> THE NASA MENTIONED THAT
FLIGHT IS EXPENSIVE, $100

672
00:41:52,550 --> 00:41:54,500
MILLION FOR REGULAR LAUNCH.
DO ANY OF THE COMPANY

673
00:41:54,500 --> 00:41:57,940
REPRESENTATIVES HAVE ANY
ESTIMATES ON WHAT IT WILL COST,

674
00:41:57,940 --> 00:42:00,560
BEING THAT THIS IS NOW GOING TO
GIVE ACCESS TO EVERYONE

675
00:42:00,560 --> 00:42:03,010
VIRTUALLY?
WHAT WILL IT COST TO GET INTO

676
00:42:03,010 --> 00:42:06,820
SPACE?
>> YOU MEAN FOR THE ENTIRE

677
00:42:06,820 --> 00:42:08,140
VEHICLE?
OKAY.

678
00:42:08,140 --> 00:42:11,860
SO FOR US FOR AN ENTIRE VEHICLE
IT'S $8 MILLION.

679
00:42:11,860 --> 00:42:15,350
>> FOR ROCKET LAB, THE BEGINNING
PRICE IS $4.9 MILLION.

680
00:42:15,350 --> 00:42:20,859
>> AND FOR VIRGIN GALACTIC WE
HAVE ADVERTISED IT AS BEING

681

00:42:20,859 --> 00:42:23,920
UNDER $10 MILLION.
>> FOLLOW-UP TO NASA WITH

682
00:42:23,920 --> 00:42:27,960
GREATER ACCESS IN ALL THESE CUBE
SATS FLYING INTO SPACE IS THERE

683
00:42:27,960 --> 00:42:30,880
A SATURATION POINT?
DO THESE THINGS EVER COME DOWN?

684
00:42:30,880 --> 00:42:35,740
>> YEAH, THEY DO COME DOWN.
WE HAVE GUIDANCE, NASA POLICY,

685
00:42:35,740 --> 00:42:38,200
ORBITAL DEBRIS WE HAVE TO FOLLOW
AND FOLLOW THROUGH THE STRICT

686
00:42:38,200 --> 00:42:42,250
POINT OF THE LAW.
ONE OF THE THINGS ABOUT THESE

687
00:42:42,250 --> 00:42:46,579
MISSIONS WE'RE ONLY GOING LIKE
425, 450 WHICH ALLOWS THE CUBE

688
00:42:46,579 --> 00:42:49,520
SATS TO DO ABOUT TWO YEARS WORTH
OF SCIENCE ON ORBIT AND RE-ENTER

689
00:42:49,520 --> 00:42:55,430
INTO THE ATMOSPHERE AND BE OUT
OF THE WAY OF OTHER SPACECRAFT.

690
00:42:55,430 --> 00:42:59,660
>> SATURATION POINT?
>> I DON'T THINK WE'RE THERE

691

00:42:59,660 --> 00:43:00,870
YET.
>> NOPE.

692
00:43:00,870 --> 00:43:04,030
>> CAN THERE BE?
>> DOWN THE ROAD IS SOMETHING I

693
00:43:04,030 --> 00:43:06,880
THINK EVERYBODY IS LOOKING AT,
OBVIOUSLY A SENSITIVITY AT TIMES

694
00:43:06,880 --> 00:43:08,109
BUT I DON'T THINK WE'RE THERE
YET.

695
00:43:08,109 --> 00:43:10,820
WITH THE OVERALL DEBRIS POLICIES
IN PLACE THAT THE GOVERNMENT IS

696
00:43:10,820 --> 00:43:12,980
STRICTLY FOLLOWING I THINK IT'S
NOT SOMETHING WE'RE ALL JUMPING

697
00:43:12,980 --> 00:43:17,509
AROUND WORRIED ABOUT.
>> JAMES?

698
00:43:17,509 --> 00:43:25,570
>> JAMES DEAN, FLORIDA, TODAY.
MAYBE FOR MARK AGAIN, IN TERMS

699
00:43:25,570 --> 00:43:28,609
OF THE COMPETITIVE ASPECT HERE,
YOU'VE SELECTED THESE COMPANIES.

700
00:43:28,609 --> 00:43:32,339
IS THERE ANY FURTHER COMPETITION
REMAINING ABOUT, YOU KNOW, WHO

701

00:43:32,339 --> 00:43:35,720
FLIES FIRST OR WHO GETS TO FLY
WHICH PAYLOADS OR ARE THEY ALL

702
00:43:35,720 --> 00:43:40,680
INTERCHANGEABLE ON EACH VEHICLE
OR IS IT, YOU KNOW, ALREADY SET

703
00:43:40,680 --> 00:43:43,700
WHO'S FLYING WHAT AND WHEN?
>> WE HAVEN'T MANIFESTED CERTAIN

704
00:43:43,700 --> 00:43:47,250
PAYLOADS ON TO CERTAIN VEHICLES
YET SO THERE IS COMPETITION

705
00:43:47,250 --> 00:43:50,660
INHERENT IN THE PROCESS.
WE DON'T WANT THEM ALL TO RUSH.

706
00:43:50,660 --> 00:43:53,800
WE GAVE THEM THE REQUIREMENT TO
LAUNCH BY 2018 AND WE WANT THEM

707
00:43:53,800 --> 00:43:57,099
TO DRIVE THAT SCHEDULE BASED ON
THEIR OWN CADENCE.

708
00:43:57,099 --> 00:44:00,970
I KNOW GARRET'S SUITE OF
PAYLOADS WILL BE MATCHED TO THE

709
00:44:00,970 --> 00:44:05,420
ORBITS THE VEHICLES WILL GO TO,
BUT NO SPECIFIC FOLLOW-ON WE

710
00:44:05,420 --> 00:44:08,619
HAVE SET IN THE SCHEDULE RIGHT
AS OF NOW.

711

00:44:08,619 --> 00:44:12,099
>> FOR ANY OF THE COMPANY
REPRESENTATIVES, COULD YOU JUST

712
00:44:12,099 --> 00:44:17,720
TOUCH ANY FURTHER ON LIKE HOW
IMPORTANT, HELPFUL, NECESSARY,

713
00:44:17,720 --> 00:44:20,390
THIS TYPE OF COMMITMENT FROM
NASA IS YOU'RE ALL REFERENCING

714
00:44:20,390 --> 00:44:24,630
OTHER FLIGHTS YOU HAVE
MANIFESTED, SO, YOU KNOW, IF

715
00:44:24,630 --> 00:44:26,970
THERE IS A GROWING MARKET YOU'RE
ALREADY TAPPING IT.

716
00:44:26,970 --> 00:44:31,380
DID YOU NEED NASA TO STEP UP TO
HELP YOU SORT OF MAKE THE

717
00:44:31,380 --> 00:44:35,010
BUSINESS CASE FOR OTHER FLIGHTS
OR IS IT JUST A MATTER OF, YOU

718
00:44:35,010 --> 00:44:38,849
KNOW, TRYING TO SHOW NASA THAT
YOU CAN CARRY, YOU KNOW, PERHAPS

719
00:44:38,849 --> 00:44:42,630
MORE VALUABLE PAYLOADS DOWN THE
LINE OR JUST KIND OF WHAT DOES

720
00:44:42,630 --> 00:44:48,250
THIS PROGRAM MEAN TO YOU?
>> I CAN JUMP IN AND AS I SAID

721

00:44:48,250 --> 00:44:51,510
IN MY COMMENTS EARLIER, I FEEL
LIKE THIS IS A VERY VITAL STEP

722
00:44:51,510 --> 00:44:55,930
FOR US IN GROWING THIS MARKET IN
THE LARGER REALM.

723
00:44:55,930 --> 00:45:00,450
SO WE FEEL THAT LIKE THE
COMMERCIAL CUSTOMERS, NASA IS A

724
00:45:00,450 --> 00:45:04,010
VERY IMPORTANT CUSTOMER TO US,
AND KNOWING THAT THEY SUPPORT

725
00:45:04,010 --> 00:45:08,329
THE INDUSTRY HELPS US GREATLY,
SO YES, IT'S VERY IMPORTANT TO

726
00:45:08,329 --> 00:45:09,430
US.
>> YEAH.

727
00:45:09,430 --> 00:45:13,609
AND, YOU KNOW, LIKE VIRGIN,
WE'RE FULLY FUNDED AS WELL, BUT

728
00:45:13,609 --> 00:45:16,670
HAVING THAT NASA STAMP OF
APPROVAL AND THAT, YOU KNOW,

729
00:45:16,670 --> 00:45:22,540
THAT SCIENCE THAT CAN BE DONE, I
THINK IS HUGELY IMPORTANT FOR

730
00:45:22,540 --> 00:45:26,840
THE GOVERNMENT ASPECT TO ENDORSE
THESE SMALL LAUNCH VEHICLES.

731

00:45:26,840 --> 00:45:29,050
>> YEAH.
AS FOR VIRGIN GALACTIC, I THINK

732
00:45:29,050 --> 00:45:31,820
IT IS IMPORTANT TO SEE THAT
GOVERNMENT IS PARTICIPATING AND

733
00:45:31,820 --> 00:45:34,660
PARTICIPATING IN A WAY THAT SORT
OF REFLECTS THE CLASS OF

734
00:45:34,660 --> 00:45:37,829
PAYLOADS THAT ARE BEING FLOWN.
SOMETIMES YOU CAN TURN AN

735
00:45:37,829 --> 00:45:40,880
INEXPENSIVE LAUNCH VEHICLE INTO
AN EXPENSIVE ONE IF YOU LEVY TOO

736
00:45:40,880 --> 00:45:43,660
MANY REQUIREMENTS ON IT.
I THINK NASA HAS TAKEN ABOUT THE

737
00:45:43,660 --> 00:45:45,950
RIGHT IT TOUCH ON THIS ON
LOOKING TO GET THESE PAYLOADS

738
00:45:45,950 --> 00:45:50,300
ACCESS TO SPACE FOR THE BEST
PRICE AND BEST VALUE AVAILABLE.

739
00:45:50,300 --> 00:45:53,329
I WOULD ALSO ADD IT'S NICE
WORKING WITH NASA BECAUSE NASA

740
00:45:53,329 --> 00:45:56,060
BRINGS A TREMENDOUS AMOUNT OF
TECHNICAL EXPERTISE TO THE

741

00:45:56,060 --> 00:45:58,839
LAUNCH SERVICES PROGRAM, THEY
HAVE A FANTASTIC RECORD OF

742
00:45:58,839 --> 00:46:00,950
SUCCESS.
WORKING WITH NASA WILL ALSO HELP

743
00:46:00,950 --> 00:46:03,980
IMPROVING THE QUALITY OF THE
LAUNCHES AND SERVICES WE

744
00:46:03,980 --> 00:46:08,829
PROVIDE.
>> AND WE GOT A FOLLOW-UP ON THE

745
00:46:08,829 --> 00:46:11,650
PHONE FROM STEVEN CLARK FROM
SPACE FLIGHT NOW.COM.

746
00:46:11,650 --> 00:46:14,579
STEVEN?
>> THANKS AGAIN, GEORGE.

747
00:46:14,579 --> 00:46:19,210
JUST ONE CLARIFICATION.
YOU KNOW, MATCHING THE PRICES

748
00:46:19,210 --> 00:46:22,180
THAT RECORDED BY THE INDUSTRY
REPRESENTATIVES AND THE CONTRACT

749
00:46:22,180 --> 00:46:24,320
VALUES, THEY'RE NOT EXACTLY THE
SAME.

750
00:46:24,320 --> 00:46:33,030
I WANTED TO JUST TO CLARIFY,
MAYBE THE REASON FOR THAT, AND

751

00:46:33,030 --> 00:46:38,530
IS THERE A POSSIBILITY THAT
OTHER PAYLOADS, NON-NASA

752
00:46:38,530 --> 00:46:45,670
PAYLOADS COULD BE MANIFESTED ON
THE DEMO FLIGHTS OR IS THIS NASA

753
00:46:45,670 --> 00:46:48,380
PURCHASING THE ENTIRE LAUNCH AND
THESE THREE DEMO FLIGHT CASES?

754
00:46:48,380 --> 00:46:50,130
>> I'LL START.
THIS IS NASA PURCHASING THE

755
00:46:50,130 --> 00:46:52,420
ENTIRE LAUNCH.
WE PUT OUT A PROPOSAL FOR 60

756
00:46:52,420 --> 00:46:55,400
KILOGRAMS SO ANYTHING WE CAN
SQUEEZE OUT OF THEIR CAPABILITY

757
00:46:55,400 --> 00:46:58,329
WE WILL.
AND THEN I'LL LET THEM ANSWER ON

758
00:46:58,329 --> 00:47:01,550
THE PRICE BUT FROM OUR
PERSPECTIVE AGAIN WE ARE BUYING

759
00:47:01,550 --> 00:47:03,849
A DEMONSTRATION MISSION SO WE
KNOW WE'RE ONE OF THE FIRST

760
00:47:03,849 --> 00:47:07,280
FLIGHTS OF THESE COMPANIES.
SO OBVIOUSLY MORE RISK ON A

761

00:47:07,280 --> 00:47:09,770
FIRST FLIGHT SO THERE IS
POTENTIALLY A DISCOUNT THERE, A

762
00:47:09,770 --> 00:47:13,270
CHANCE FOR US TO GET IN EARLY AS
AN EARLY CUSTOMER BUT THEY WILL

763
00:47:13,270 --> 00:47:16,020
DERIVE THE PRICE BASED ON THE
COMMERCIAL MARKET THEY'RE

764
00:47:16,020 --> 00:47:20,740
LOOKING TO SERVE.
>> AND IN THE CASE OF VIRGIN

765
00:47:20,740 --> 00:47:24,170
GALACTIC, OUR PRICE IS RELATIVE
TO THE LEVEL OF RISK THE

766
00:47:24,170 --> 00:47:25,290
CUSTOMER IS WILLING TO
UNDERTAKE.

767
00:47:25,290 --> 00:47:31,660
IN THE CASE OF NASA WE PLAN TO
START WITH OUR TEST FLIGHTS.

768
00:47:31,660 --> 00:47:34,329
AS TO WHAT PRICE WILL BE FOR
FOLLOW ON ACTIVITIES DEPENDS ON

769
00:47:34,329 --> 00:47:39,520
WHAT THE CUSTOMERS WANT.
>> >> FOR ROCKET LAB, NASA WILL

770
00:47:39,520 --> 00:47:44,069
BE FLYING ON FLIGHTS FOR US,
WE'LL BE FULLY COMMERCIAL BY THE

771

00:47:44,069 --> 00:47:48,290
TIME WE FLY THE NASA PAYLOADS
AND OUR PRICE IS A LITTLE HIGHER

772
00:47:48,290 --> 00:47:52,359
BASED ON THAT EXTRA REQUIREMENTS
ARE INVOLVED FOR THE NASA

773
00:47:52,359 --> 00:47:58,200
MISSION.
>> AND FOR FIREFLY, NASA WILL BE

774
00:47:58,200 --> 00:48:02,450
FLYING ON SOME OF OUR EARLIER
MISSIONS, SO THERE IS SOME RISK

775
00:48:02,450 --> 00:48:05,849
IN THERE AND WE DID TAKE THAT
INTO CONSIDERATION IN THE

776
00:48:05,849 --> 00:48:08,410
PRICING.
>> LET'S DO ONE MORE SWEEP OF

777
00:48:08,410 --> 00:48:11,780
THE ROOM FOR ANY FURTHER
QUESTIONS FOR THE MEDIA HERE.

778
00:48:11,780 --> 00:48:15,010
ALL RIGHT.
IN THAT EVENT, THAT WILL