



1  
00:00:09,940 --> 00:00:07,670  
this morning's program will be opened by

2  
00:00:12,830 --> 00:00:09,950  
the singing of the national anthem

3  
00:01:29,630 --> 00:00:12,840  
followed by the invocation to be given

4  
00:01:39,920 --> 00:01:36,719  
let us pray Almighty God we stand before

5  
00:01:42,510 --> 00:01:39,930  
thee as thy children should

6  
00:01:46,440 --> 00:01:42,520  
acknowledging our dependence upon thee

7  
00:01:51,090 --> 00:01:46,450  
and our gratitude genuine comfort and

8  
00:01:54,870 --> 00:01:51,100  
challenge we profess before all men our

9  
00:01:58,830 --> 00:01:54,880  
trust in thee and pray that thou shalt

10  
00:02:02,850 --> 00:01:58,840  
bless our nation our president and all

11  
00:02:06,359 --> 00:02:02,860  
others whom we in freedom have chosen to

12  
00:02:09,330 --> 00:02:06,369  
govern us granted by benediction that

13  
00:02:14,490 --> 00:02:09,340

our spirits may be steadfast in

14

00:02:17,520 --> 00:02:14,500

righteousness is faithful in truth so

15

00:02:21,120 --> 00:02:17,530

may we through the might of science

16

00:02:24,900 --> 00:02:21,130

conquer space and in the light of thy

17

00:02:28,380 --> 00:02:24,910

spirit conquer evil within ourselves and

18

00:02:31,440 --> 00:02:28,390

in our world that we may more perfectly

19

00:02:47,680 --> 00:02:31,450

serve thee and where they lay magnify

20

00:02:54,820 --> 00:02:52,450

as president of Rice University it is my

21

00:02:59,080 --> 00:02:54,830

honor to welcome you to this auspicious

22

00:03:02,590 --> 00:02:59,090

occasion this is our semi centennial

23

00:03:06,790 --> 00:03:02,600

year and I declare this to be the

24

00:03:09,910 --> 00:03:06,800

opening event of that year I cannot

25

00:03:12,160 --> 00:03:09,920

imagine a more illustrious opening than

26

00:03:14,730 --> 00:03:12,170

this one with the President of the

27

00:03:19,900 --> 00:03:14,740

United States speaking on the subject

28

00:03:22,930 --> 00:03:19,910

science and space rice University has

29

00:03:26,080 --> 00:03:22,940

emphasized science in its program for 50

30

00:03:28,530 --> 00:03:26,090

years many important scientific

31

00:03:31,270 --> 00:03:28,540

discoveries have been made here an

32

00:03:33,910 --> 00:03:31,280

interdisciplinary research program and

33

00:03:36,760 --> 00:03:33,920

the science of solid materials was

34

00:03:38,650 --> 00:03:36,770

initiated at Rice under a grant from the

35

00:03:43,320 --> 00:03:38,660

National Aeronautics and Space

36

00:03:46,800 --> 00:03:43,330

Administration in 1959 we also have an

37

00:03:48,610 --> 00:03:46,810

important program in nuclear physics in

38

00:03:52,229 --> 00:03:48,620

association with the Atomic Energy

39

00:03:54,760 --> 00:03:52,239

Commission and other things in this area

40

00:03:57,610 --> 00:03:54,770

teamwork between the universities and

41

00:04:01,840 --> 00:03:57,620

the federal government is essential for

42

00:04:04,960 --> 00:04:01,850

our national security and welfare and we

43

00:04:07,570 --> 00:04:04,970

at Rice University pledge ourselves to

44

00:04:10,240 --> 00:04:07,580

continued cooperation and to expansion

45

00:04:15,820 --> 00:04:10,250

of our science programs to meet the

46

00:04:18,659 --> 00:04:15,830

needs of tomorrow mr. president I would

47

00:04:22,420 --> 00:04:18,669

like to introduce to you the class of

48

00:04:27,280 --> 00:04:22,430

1966 of Rice University sitting directly

49

00:04:30,430 --> 00:04:27,290

before you as has been noted in the

50

00:04:36,040 --> 00:04:30,440

public press the academic qualifications

51  
00:04:37,930 --> 00:04:36,050  
of this class are outstanding these

52  
00:04:40,600 --> 00:04:37,940  
students have come early for an

53  
00:04:43,570 --> 00:04:40,610  
orientation program and we are most

54  
00:04:46,120 --> 00:04:43,580  
honored to officially appoint you mr.

55  
00:04:57,070 --> 00:04:46,130  
president a visiting professor of Rice

56  
00:05:08,020 --> 00:05:04,619  
I take pride also in presenting to you

57  
00:05:10,779 --> 00:05:08,030  
35,000 students from Houston schools and

58  
00:05:13,779 --> 00:05:10,789  
colleges both public and private that

59  
00:05:26,300 --> 00:05:13,789  
are assembled to hear you here today you

60  
00:05:32,459 --> 00:05:28,969  
now it is my privilege to recognize

61  
00:05:35,129 --> 00:05:32,469  
quickly just a few of our honored guests

62  
00:05:37,439 --> 00:05:35,139  
I say just a few because we must be

63  
00:05:40,860 --> 00:05:37,449

brief and we have so many distinguished

64

00:05:42,480 --> 00:05:40,870

guests on this platform first the mayor

65

00:05:44,580 --> 00:05:42,490

of Houston with whom it has been a real

66

00:05:46,800 --> 00:05:44,590

pleasure to cooperate in this and many

67

00:05:56,510 --> 00:05:46,810

other activities for the development of

68

00:06:00,870 --> 00:05:58,830

second the chief official of Harris

69

00:06:08,240 --> 00:06:00,880

County our distinguished County Judge

70

00:06:13,409 --> 00:06:11,580

next is a new Houston resident but one

71

00:06:16,080 --> 00:06:13,419

who is already very much a part of our

72

00:06:18,689 --> 00:06:16,090

community our distinguished director of

73

00:06:28,059 --> 00:06:18,699

the manned spacecraft laboratory mr.

74

00:06:33,429 --> 00:06:30,739

mr. president I want also wish to

75

00:06:36,409 --> 00:06:33,439

present now our most distinguished

76

00:06:38,230 --> 00:06:36,419

Houstonian scientist member of your

77

00:06:40,219 --> 00:06:38,240

National Science Foundation board

78

00:06:43,010 --> 00:06:40,229

president of the American Physical

79

00:06:45,290 --> 00:06:43,020

Society my good friend and predecessor

80

00:06:55,470 --> 00:06:45,300

is president of this University dr.

81

00:06:59,890 --> 00:06:57,940

and now turning to the level of the

82

00:07:02,890 --> 00:06:59,900

state government it is my great pleasure

83

00:07:11,650 --> 00:07:02,900

to present for your recognition governor

84

00:07:16,640 --> 00:07:14,270

traveling with the president are many

85

00:07:19,520 --> 00:07:16,650

high officials of executive agencies and

86

00:07:22,270 --> 00:07:19,530

we welcome them all I wish now to

87

00:07:24,830 --> 00:07:22,280

recognize an old personal friend

88

00:07:26,840 --> 00:07:24,840

distinguished physicist the top

89

00:07:29,240 --> 00:07:26,850

scientists of our military department

90

00:07:38,070 --> 00:07:29,250

the director of defense research in

91

00:07:44,800 --> 00:07:41,080

next May I welcome the protector of your

92

00:07:53,689 --> 00:07:44,810

tax dollars the director of the Bureau

93

00:07:58,520 --> 00:07:56,610

next is a man whose role is particularly

94

00:08:00,870 --> 00:07:58,530

significant in view of today's subject

95

00:08:03,360 --> 00:08:00,880

the director of the new office of

96

00:08:06,240 --> 00:08:03,370

science and technology and science

97

00:08:08,040 --> 00:08:06,250

advisor to the president also a

98

00:08:10,439 --> 00:08:08,050

distinguished member of the National

99

00:08:15,190 --> 00:08:10,449

Academy of Sciences dr. Jerome B

100

00:08:21,760 --> 00:08:20,110

I can recognize only a few of many

101  
00:08:23,500 --> 00:08:21,770  
officials of the National Aeronautics

102  
00:08:26,440 --> 00:08:23,510  
and Space Administration that are

103  
00:08:28,090 --> 00:08:26,450  
present today first and foremost of

104  
00:08:31,170 --> 00:08:28,100  
course is the administrator of that

105  
00:08:33,340 --> 00:08:31,180  
agency alternating through the years

106  
00:08:35,909 --> 00:08:33,350  
successful business leadership and

107  
00:08:37,990 --> 00:08:35,919  
high-level public service as

108  
00:08:40,390 --> 00:08:38,000  
Undersecretary of state and as director

109  
00:08:43,090 --> 00:08:40,400  
of the Bureau of the budget he is now

110  
00:08:45,340 --> 00:08:43,100  
bringing all of his remarkable skills of

111  
00:08:48,220 --> 00:08:45,350  
leadership and management to the service

112  
00:08:50,650 --> 00:08:48,230  
of our nation in this most urgent

113  
00:08:52,570 --> 00:08:50,660

program in space it is with particular

114

00:09:02,680 --> 00:08:52,580

pleasure that I present the Honorable

115

00:09:05,440 --> 00:09:02,690

James Eve Webb may I also present the

116

00:09:12,490 --> 00:09:05,450

associate administrator of NASA dr.

117

00:09:16,700 --> 00:09:14,900

there's also a most appropriate that we

118

00:09:25,810 --> 00:09:16,710

recognize the director of manned space

119

00:09:29,960 --> 00:09:28,250

we're also privileged to have a very

120

00:09:31,850 --> 00:09:29,970

distinguished visitor from Great Britain

121

00:09:33,950 --> 00:09:31,860

the chief scientific advisor to Prime

122

00:09:41,699 --> 00:09:33,960

Minister Macmillan sir Sally's Duck

123

00:09:45,940 --> 00:09:44,230

it is now my privilege to introduce the

124

00:09:48,370 --> 00:09:45,950

members of Congress accompanying the

125

00:09:50,560 --> 00:09:48,380

president today it is a great pleasure

126  
00:09:52,449 --> 00:09:50,570  
to present the chairman of the science

127  
00:09:54,699 --> 00:09:52,459  
and Astronautics Committee of the House

128  
00:10:03,940 --> 00:09:54,709  
of Representatives the Honorable George

129  
00:10:05,949 --> 00:10:03,950  
P Miller of California next we wish to

130  
00:10:08,260 --> 00:10:05,959  
cordially welcome the ranking Republican

131  
00:10:10,750 --> 00:10:08,270  
member of the Senate Committee on

132  
00:10:20,390 --> 00:10:10,760  
aeronautical and Space Science the

133  
00:10:25,950 --> 00:10:23,490  
now it is a particular privilege to

134  
00:10:29,250 --> 00:10:25,960  
present to you the representative from

135  
00:10:30,900 --> 00:10:29,260  
Houston now in his 13th term the

136  
00:10:32,190 --> 00:10:30,910  
chairman of the independent offices

137  
00:10:33,810 --> 00:10:32,200  
subcommittee of the Committee on

138  
00:10:37,890 --> 00:10:33,820

## Appropriations of the United States

139

00:10:39,870 --> 00:10:37,900

Congress and I add parenthetically that

140

00:10:42,450 --> 00:10:39,880

I appeared before this committee under

141

00:10:44,520 --> 00:10:42,460

his chairmanship for three years when I

142

00:10:46,980 --> 00:10:44,530

was director of research for the Atomic

143

00:10:49,740 --> 00:10:46,990

Energy Commission and I developed a

144

00:10:52,190 --> 00:10:49,750

great respect for his keen insight and

145

00:10:55,340 --> 00:10:52,200

devotion to the welfare of this nation

146

00:10:57,630 --> 00:10:55,350

but for my present position today I

147

00:10:59,580 --> 00:10:57,640

introduced as a very distinguished

148

00:11:09,629 --> 00:10:59,590

alumnus of Rice University

149

00:11:15,280 --> 00:11:12,400

it's certainly wonderful to be at home

150

00:11:17,620 --> 00:11:15,290

then no one could fill this stain like

151  
00:11:27,330 --> 00:11:17,630  
the president of the United States there

152  
00:11:33,490 --> 00:11:31,000  
and now it is a particular pleasure to

153  
00:11:35,380 --> 00:11:33,500  
present the vice president of the United

154  
00:11:37,510 --> 00:11:35,390  
States and chairman of the National

155  
00:11:39,430 --> 00:11:37,520  
Aeronautics and Space Council the

156  
00:11:52,760 --> 00:11:39,440  
Honorable Lyndon Johnson of our state of

157  
00:12:02,360 --> 00:11:58,940  
dr. pizza since his inauguration I have

158  
00:12:06,430 --> 00:12:02,370  
seen our president use his energy and

159  
00:12:11,990 --> 00:12:06,440  
his intelligence his personal warmth and

160  
00:12:16,420 --> 00:12:12,000  
his perception to try to make life in

161  
00:12:20,410 --> 00:12:16,430  
the United States more meaningful for

162  
00:12:23,829 --> 00:12:20,420  
everybody in many different ways and

163  
00:12:28,190 --> 00:12:23,839

always to do what he believed was best

164

00:12:33,290 --> 00:12:28,200

for his country just as in other things

165

00:12:36,440 --> 00:12:33,300

he has put vigor and vitality into the

166

00:12:41,079 --> 00:12:36,450

space program and it is my great honor

167

00:12:45,350 --> 00:12:41,089

and privilege to be here today and to

168

00:12:49,600 --> 00:12:45,360

see the people of a leading space city

169

00:13:06,400 --> 00:12:49,610

give such a warm welcome to our

170

00:13:12,380 --> 00:13:09,949

before making my final presentation may

171

00:13:14,750 --> 00:13:12,390

I announce that after the president's

172

00:13:17,560 --> 00:13:14,760

address the benediction will be given

173

00:13:21,380 --> 00:13:17,570

without further announcement by rabbi

174

00:13:23,480 --> 00:13:21,390

Robert Ikon also may I remind the

175

00:13:26,389 --> 00:13:23,490

audience that you will remain in place

176

00:13:29,810 --> 00:13:26,399

until the president's party has left the

177

00:14:14,669 --> 00:13:29,820

stadium and now ladies and gentlemen the

178

00:14:23,679 --> 00:14:18,269

president Pizza mr. vice president

179

00:14:26,759 --> 00:14:23,689

governor congressman Thomas senator

180

00:14:31,419 --> 00:14:26,769

Wiley and Congressman Miller mr. Webb

181

00:14:34,540 --> 00:14:31,429

Bell scientists distinguished guests

182

00:14:36,850 --> 00:14:34,550

ladies and gentlemen I appreciate your

183

00:14:39,759 --> 00:14:36,860

president having made me an honorary

184

00:14:42,460 --> 00:14:39,769

visiting professor and I will assure you

185

00:14:45,639 --> 00:14:42,470

that my first lecture will be very brief

186

00:14:47,139 --> 00:14:45,649

I am delighted to be here and I'm

187

00:14:51,879 --> 00:14:47,149

particularly delighted to be here on

188

00:14:54,609 --> 00:14:51,889

this occasion we meet at a college noted

189

00:14:57,340 --> 00:14:54,619

for knowledge in a city noted for

190

00:15:01,660 --> 00:14:57,350

progress in a state noted for strength

191

00:15:03,699 --> 00:15:01,670

and we stand in need of all three four

192

00:15:07,299 --> 00:15:03,709

we meet in an hour of change and

193

00:15:09,759 --> 00:15:07,309

challenge in a decade of hope and fear

194

00:15:12,850 --> 00:15:09,769

in an age of both knowledge and

195

00:15:15,220 --> 00:15:12,860

ignorance the greater our knowledge

196

00:15:19,900 --> 00:15:15,230

increases the greater our ignorance

197

00:15:21,699 --> 00:15:19,910

unfolds despite the striking fact that

198

00:15:25,090 --> 00:15:21,709

most of the scientists that the world

199

00:15:28,030 --> 00:15:25,100

has ever known are alive and working

200

00:15:31,109 --> 00:15:28,040

today despite the fact that this

201  
00:15:34,809 --> 00:15:31,119  
nation's own scientific manpower is

202  
00:15:38,590 --> 00:15:34,819  
doubling every 12 years in a rate of

203  
00:15:40,169 --> 00:15:38,600  
growth more than three times that of our

204  
00:15:44,710 --> 00:15:40,179  
population as a whole

205  
00:15:48,400 --> 00:15:44,720  
despite that the vast stretches of the

206  
00:15:52,359 --> 00:15:48,410  
unknown and the unanswered and the

207  
00:15:55,780 --> 00:15:52,369  
unfinished still far outstrip our

208  
00:15:59,889 --> 00:15:55,790  
collective comprehension no man can

209  
00:16:05,439 --> 00:15:59,899  
fully grasp how far and how fast we have

210  
00:16:09,519 --> 00:16:05,449  
come but condense if you will the 50,000

211  
00:16:13,210 --> 00:16:09,529  
years of man's recorded history in a

212  
00:16:16,210 --> 00:16:13,220  
time span of but a half a century stated

213  
00:16:17,840 --> 00:16:16,220

in these terms we know very little about

214

00:16:21,300 --> 00:16:17,850

the first 40 years

215

00:16:23,100 --> 00:16:21,310

except at the end of them advanced man

216

00:16:26,750 --> 00:16:23,110

had learned to use the skins of animals

217

00:16:30,240 --> 00:16:26,760

to cover them then about ten years ago

218

00:16:32,910 --> 00:16:30,250

under this standard man emerged from his

219

00:16:37,170 --> 00:16:32,920

caves to construct other kinds of

220

00:16:40,850 --> 00:16:37,180

Sheldon only five years ago man learned

221

00:16:43,500 --> 00:16:40,860

to write and use a cart with wheels

222

00:16:47,040 --> 00:16:43,510

Christianity began less than two years

223

00:16:51,450 --> 00:16:47,050

ago the printing press came this year

224

00:16:54,380 --> 00:16:51,460

and then less than two months ago during

225

00:16:57,810 --> 00:16:54,390

this whole 50-year span of human history

226

00:16:59,030 --> 00:16:57,820

the steam engine provided a new source

227

00:17:01,730 --> 00:16:59,040

of power

228

00:17:05,790 --> 00:17:01,740

Newton explored the meaning of gravity

229

00:17:09,000 --> 00:17:05,800

lies love electric lights and telephones

230

00:17:13,170 --> 00:17:09,010

and automobiles and airplanes became

231

00:17:16,140 --> 00:17:13,180

available only last week did we develop

232

00:17:19,110 --> 00:17:16,150

penicillin and television and nuclear

233

00:17:23,699 --> 00:17:19,120

power and now if America's new

234

00:17:25,850 --> 00:17:23,709

spacecraft succeeds in reaching Venus we

235

00:17:29,160 --> 00:17:25,860

will have literally reached the Stars

236

00:17:32,760 --> 00:17:29,170

before midnight tonight this is a

237

00:17:36,990 --> 00:17:32,770

breathhtaking pace and such a pace cannot

238

00:17:41,130 --> 00:17:37,000

help but create new ills as it dispels

239

00:17:44,310 --> 00:17:41,140

old new ignorance new problems new

240

00:17:48,570 --> 00:17:44,320

dangers surely the opening vistas of

241

00:17:52,470 --> 00:17:48,580

space promise high costs and hardships

242

00:17:55,680 --> 00:17:52,480

as well as high reward so it is not

243

00:17:59,340 --> 00:17:55,690

surprising that some would have us stay

244

00:18:02,970 --> 00:17:59,350

where we are a little longer to rest -

245

00:18:05,760 --> 00:18:02,980

we bought this city of Houston this

246

00:18:07,830 --> 00:18:05,770

state of Texas this country of the

247

00:18:10,530 --> 00:18:07,840

United States was not built by those who

248

00:18:19,960 --> 00:18:10,540

waited and rested and wish to look

249

00:18:28,039 --> 00:18:23,810

this country was conquered by those who

250

00:18:32,600 --> 00:18:28,049

move forward and so will space William

251

00:18:35,720 --> 00:18:32,610

Bradford speaking in 1630 of the

252

00:18:37,669 --> 00:18:35,730

founding of the Plymouth Bay Colony said

253

00:18:40,549 --> 00:18:37,679

that all great and honourable actions

254

00:18:45,169 --> 00:18:40,559

are accompanied with great difficulties

255

00:18:49,279 --> 00:18:45,179

and both must be enterprise and overcome

256

00:18:51,080 --> 00:18:49,289

with answerable courage if this capsule

257

00:18:54,470 --> 00:18:51,090

history of our progress teaches us

258

00:18:56,659 --> 00:18:54,480

anything it is that man in his quest for

259

00:19:00,169 --> 00:18:56,669

knowledge and progress is determined and

260

00:19:03,499 --> 00:19:00,179

cannot be deterred the exploration of

261

00:19:06,799 --> 00:19:03,509

space will go ahead whether we join in

262

00:19:10,269 --> 00:19:06,809

it or not and it is one of the great

263

00:19:13,519 --> 00:19:10,279

adventures of all time and no nation

264

00:19:16,279 --> 00:19:13,529

which expects to be the leader of other

265

00:19:19,879 --> 00:19:16,289

nations can expect to stay behind in

266

00:19:23,450 --> 00:19:19,889

this race for space those who came

267

00:19:26,450 --> 00:19:23,460

before us made certain that this country

268

00:19:29,239 --> 00:19:26,460

rode the first waves of the Industrial

269

00:19:31,909 --> 00:19:29,249

Revolution the first waves of modern

270

00:19:35,180 --> 00:19:31,919

invention and the first wave of nuclear

271

00:19:39,320 --> 00:19:35,190

power and this generation does not

272

00:19:42,349 --> 00:19:39,330

intend to founder in the backwash of the

273

00:19:54,820 --> 00:19:42,359

coming age of space we mean to be a part

274

00:20:01,970 --> 00:19:58,970

for the eyes of the world now look into

275

00:20:06,560 --> 00:20:01,980

space to the moon and to the planets

276  
00:20:10,280 --> 00:20:06,570  
beyond and we have vowed that we shall

277  
00:20:14,050 --> 00:20:10,290  
not see it governed by a hostile flag of

278  
00:20:17,960 --> 00:20:14,060  
conquest but by a banner of freedom and

279  
00:20:20,930 --> 00:20:17,970  
peace we evolved that we shall not see

280  
00:20:23,570 --> 00:20:20,940  
space filled with weapons of mass

281  
00:20:27,170 --> 00:20:23,580  
destruction but with instruments of

282  
00:20:31,340 --> 00:20:27,180  
knowledge and understanding yet the vows

283  
00:20:34,600 --> 00:20:31,350  
of this nation can only be fulfilled if

284  
00:20:44,030 --> 00:20:34,610  
we in this nation are first and

285  
00:20:50,900 --> 00:20:47,870  
in short our leadership in science and

286  
00:20:54,890 --> 00:20:50,910  
industry our hopes for peace and

287  
00:20:58,130 --> 00:20:54,900  
security our obligations to ourselves as

288  
00:21:01,820 --> 00:20:58,140

well as others all require us to make

289

00:21:03,910 --> 00:21:01,830

this effort to solve these mysteries to

290

00:21:06,590 --> 00:21:03,920

solve them for the good of all men and

291

00:21:10,850 --> 00:21:06,600

to become the world's leading

292

00:21:13,700 --> 00:21:10,860

spacefaring nation we set sail on this

293

00:21:17,120 --> 00:21:13,710

new sea because there is new knowledge

294

00:21:21,020 --> 00:21:17,130

to be gained and new rights to be won

295

00:21:24,580 --> 00:21:21,030

and they must be won and used for the

296

00:21:27,560 --> 00:21:24,590

progress of all people for space science

297

00:21:31,610 --> 00:21:27,570

like nuclear science and all technology

298

00:21:34,040 --> 00:21:31,620

has no conscience of its own whether it

299

00:21:37,580 --> 00:21:34,050

will become a force for good or ill

300

00:21:40,850 --> 00:21:37,590

depends on man and only if the United

301  
00:21:45,560 --> 00:21:40,860  
States occupies a position of

302  
00:21:48,950 --> 00:21:45,570  
preeminence can we help decide whether

303  
00:21:54,050 --> 00:21:48,960  
this new ocean will be a sea of peace or

304  
00:21:56,380 --> 00:21:54,060  
a new terrifying theater of war I do not

305  
00:21:59,990 --> 00:21:56,390  
say that we should or will go

306  
00:22:03,700 --> 00:22:00,000  
unprotected against the hostile misuse

307  
00:22:07,210 --> 00:22:03,710  
of space any more than we go unprotected

308  
00:22:10,250 --> 00:22:07,220  
against the hostile use of land or sea

309  
00:22:14,150 --> 00:22:10,260  
but I do say that space can be explored

310  
00:22:17,180 --> 00:22:14,160  
and nasty without feeding the fires of

311  
00:22:20,300 --> 00:22:17,190  
war without repeating the mistakes that

312  
00:22:21,710 --> 00:22:20,310  
man is made in extending his writ around

313  
00:22:25,430 --> 00:22:21,720

this globe of ours

314

00:22:29,050 --> 00:22:25,440

there is no strife no prejudice no

315

00:22:32,990 --> 00:22:29,060

national conflict in outer space as yet

316

00:22:35,420 --> 00:22:33,000

its hazards a hostile to us all its

317

00:22:39,380 --> 00:22:35,430

conquest deserves the best of all

318

00:22:42,980 --> 00:22:39,390

mankind and its opportunity for peaceful

319

00:22:46,730 --> 00:22:42,990

cooperation may never come again but why

320

00:22:50,900 --> 00:22:46,740

some say the moon I choose this as our

321

00:22:52,100 --> 00:22:50,910

goal and they may well ask why climb the

322

00:22:56,250 --> 00:22:52,110

highest mountain

323

00:22:59,850 --> 00:22:56,260

why 35 years ago fly the Atlantic

324

00:23:08,790 --> 00:22:59,860

why does Rice play Texas we choose to go

325

00:23:13,830 --> 00:23:11,700

we choose to go to the moon in this

326

00:23:16,770 --> 00:23:13,840

decade and do the other things not

327

00:23:20,670 --> 00:23:16,780

because they are easy but because they

328

00:23:23,730 --> 00:23:20,680

are hard because that goal will serve to

329

00:23:25,950 --> 00:23:23,740

organize and measure the best of our

330

00:23:28,200 --> 00:23:25,960

energies and skills because that

331

00:23:31,140 --> 00:23:28,210

challenge is one that we're willing to

332

00:23:34,830 --> 00:23:31,150

accept one we are unwilling to postpone

333

00:23:49,560 --> 00:23:34,840

and one we intend to win and the others

334

00:23:52,620 --> 00:23:49,570

too it is for these reasons that I

335

00:23:55,320 --> 00:23:52,630

regard the decision last year to shift

336

00:23:57,990 --> 00:23:55,330

our efforts in space from low to high

337

00:24:00,330 --> 00:23:58,000

gear as among the most important

338

00:24:01,830 --> 00:24:00,340

decisions that will be made during my

339

00:24:05,880 --> 00:24:01,840

incumbency in the office of the

340

00:24:08,880 --> 00:24:05,890

presidency in the last 24 hours we have

341

00:24:10,770 --> 00:24:08,890

seen facilities now being created for

342

00:24:14,070 --> 00:24:10,780

the greatest and most complex

343

00:24:16,800 --> 00:24:14,080

exploration in man's history we have

344

00:24:20,010 --> 00:24:16,810

felt the ground shake and the air

345

00:24:23,370 --> 00:24:20,020

shattered by the testing of a Saturn c1

346

00:24:26,840 --> 00:24:23,380

booster rocket many times as powerful as

347

00:24:29,880 --> 00:24:26,850

the Atlas which launched John glamour

348

00:24:32,340 --> 00:24:29,890

generating power equivalent to 10,000

349

00:24:35,910 --> 00:24:32,350

automobiles with their accelerator on

350

00:24:39,780 --> 00:24:35,920

the floor we have seen the site where

351

00:24:42,780 --> 00:24:39,790

five f1 rocket engines each one as

352

00:24:45,570 --> 00:24:42,790

powerful as all eight engines of the

353

00:24:48,750 --> 00:24:45,580

Saturn combine will be clustered

354

00:24:52,140 --> 00:24:48,760

together to make the advanced Saturn

355

00:24:55,050 --> 00:24:52,150

missile assembled in a new building to

356

00:24:59,160 --> 00:24:55,060

be built at Cape Canaveral as tall as a

357

00:25:02,820 --> 00:24:59,170

48 story structure as wide as a city

358

00:25:06,270 --> 00:25:02,830

block and as long as two lengths of this

359

00:25:09,570 --> 00:25:06,280

field within these last 19 months at

360

00:25:12,390 --> 00:25:09,580

least 45 satellites have circled the

361

00:25:15,000 --> 00:25:12,400

earth some 40 of them were made in the

362

00:25:18,180 --> 00:25:15,010

United States of America and they were

363

00:25:19,560 --> 00:25:18,190

far more sophisticated and supplied far

364

00:25:21,840 --> 00:25:19,570

more knowledge to the P

365

00:25:29,480 --> 00:25:21,850

of the world than those of the Soviet

366

00:25:35,220 --> 00:25:32,820

the Meredith spacecraft now on its way

367

00:25:37,500 --> 00:25:35,230

to Venus is the most intricate

368

00:25:40,669 --> 00:25:37,510

instrument in the history of space

369

00:25:43,500 --> 00:25:40,679

science the accuracy of that shot is

370

00:25:46,019 --> 00:25:43,510

comparable to firing a missile from Cape

371

00:25:48,440 --> 00:25:46,029

Canaveral and dropping it in this state

372

00:25:50,970 --> 00:25:48,450

in between the 40-yard lines

373

00:25:54,899 --> 00:25:50,980

transit satellites are helping our ships

374

00:25:56,460 --> 00:25:54,909

at sea to steer a safer course tyrus

375

00:25:59,549 --> 00:25:56,470

satellites have given us unprecedented

376

00:26:01,860 --> 00:25:59,559

warnings of hurricanes and storms and

377

00:26:05,850 --> 00:26:01,870

will do the same for forest fires and

378

00:26:08,159 --> 00:26:05,860

iceberg we have had our failure but so

379

00:26:15,750 --> 00:26:08,169

about us even if they do not admit them

380

00:26:22,200 --> 00:26:19,230

you'll be sure we are behind and we'll

381

00:26:25,620 --> 00:26:22,210

be behind for some time in man flight

382

00:26:28,530 --> 00:26:25,630

but we do not intend to stay behind and

383

00:26:36,350 --> 00:26:28,540

in this decade we shall make up and move

384

00:26:42,150 --> 00:26:39,470

the growth of our science and education

385

00:26:44,700 --> 00:26:42,160

will be enriched by new knowledge of our

386

00:26:46,890 --> 00:26:44,710

universe and environment by new

387

00:26:50,160 --> 00:26:46,900

techniques of learning and mapping and

388

00:26:53,220 --> 00:26:50,170

observation by new tools and computers

389

00:26:55,950 --> 00:26:53,230

for industry medicine the whole as well

390

00:26:58,680 --> 00:26:55,960

as the school technical institutions

391

00:27:02,220 --> 00:26:58,690

such as rice will reap the harvest of

392

00:27:05,670 --> 00:27:02,230

these games and finally the space effort

393

00:27:07,560 --> 00:27:05,680

itself while still in its infancy has

394

00:27:10,830 --> 00:27:07,570

already created a great number of new

395

00:27:14,580 --> 00:27:10,840

companies and tens and thousands of new

396

00:27:17,250 --> 00:27:14,590

jobs space and related industries are

397

00:27:21,060 --> 00:27:17,260

generating new demands in investment and

398

00:27:24,450 --> 00:27:21,070

skilled personnel and this city and this

399

00:27:26,940 --> 00:27:24,460

state and this region will share greatly

400

00:27:29,520 --> 00:27:26,950

in this growth what was once the

401  
00:27:32,880 --> 00:27:29,530  
furthest outpost on the old frontier of

402  
00:27:35,690 --> 00:27:32,890  
the West will be the furthest outpost on

403  
00:27:41,100 --> 00:27:35,700  
the new frontier of science and space

404  
00:27:47,800 --> 00:27:44,500  
your city of Houston with its manned

405  
00:27:50,590 --> 00:27:47,810  
spacecraft Center will become the heart

406  
00:27:54,760 --> 00:27:50,600  
of a large scientific and engineering

407  
00:27:56,140 --> 00:27:54,770  
community during the next five years the

408  
00:27:58,990 --> 00:27:56,150  
National Aeronautics and Space

409  
00:28:01,000 --> 00:27:59,000  
Administration expects to double the

410  
00:28:04,150 --> 00:28:01,010  
number of scientists and engineers in

411  
00:28:06,520 --> 00:28:04,160  
this area to increase its outlays for

412  
00:28:09,490 --> 00:28:06,530  
salaries and expenses to sixty million

413  
00:28:11,740 --> 00:28:09,500

dollars a year to invest some 200

414

00:28:15,580 --> 00:28:11,750

million dollars in plan and laboratory

415

00:28:18,460 --> 00:28:15,590

facilities and to direct or contract for

416

00:28:22,000 --> 00:28:18,470

new space efforts over 1 billion dollars

417

00:28:24,670 --> 00:28:22,010

from this Center in this city to be sure

418

00:28:24,940 --> 00:28:24,680

all this costs us all a good deal of

419

00:28:28,630 --> 00:28:24,950

money

420

00:28:33,370 --> 00:28:28,640

this year's space budget is three times

421

00:28:35,260 --> 00:28:33,380

what it was in January 1961 and it is

422

00:28:38,050 --> 00:28:35,270

greater than the space budget of the

423

00:28:41,410 --> 00:28:38,060

previous eight years combined that

424

00:28:43,500 --> 00:28:41,420

budget now stands at five billion four

425

00:28:46,810 --> 00:28:43,510

hundred million dollars a year a

426

00:28:49,450 --> 00:28:46,820

staggering sum though somewhat less than

427

00:28:57,340 --> 00:28:49,460

we pay for cigarettes and cigars every

428

00:29:03,779 --> 00:29:00,310

these expenditures will soon rise some

429

00:29:07,270 --> 00:29:03,789

more from 40 cents per person for a week

430

00:29:09,840 --> 00:29:07,280

to more than 50 cents a week for every

431

00:29:12,789 --> 00:29:09,850

man woman and child in the United States

432

00:29:16,659 --> 00:29:12,799

for we have given this program a high

433

00:29:19,270 --> 00:29:16,669

national priority even though I realized

434

00:29:23,740 --> 00:29:19,280

that this is in some measure an act of

435

00:29:27,159 --> 00:29:23,750

faith and vision for we do not know what

436

00:29:30,130 --> 00:29:27,169

benefits await us but if I were to say

437

00:29:35,020 --> 00:29:30,140

my fellow citizens that we shall send to

438

00:29:38,110 --> 00:29:35,030

the moon 240,000 miles away from the

439

00:29:41,830 --> 00:29:38,120

control station in Houston a giant

440

00:29:44,529 --> 00:29:41,840

rocket more than 300 feet tall the

441

00:29:47,200 --> 00:29:44,539

length of this football field made of

442

00:29:50,440 --> 00:29:47,210

new metal alloys some of which have not

443

00:29:53,409 --> 00:29:50,450

yet been invented capable of standing

444

00:29:55,350 --> 00:29:53,419

heat and stresses several times more

445

00:29:58,029 --> 00:29:55,360

than have ever been experienced fitted

446

00:30:01,149 --> 00:29:58,039

together with a precision better than

447

00:30:03,010 --> 00:30:01,159

the finest watch carrying all the

448

00:30:06,789 --> 00:30:03,020

equipment needed for propulsion guidance

449

00:30:10,899 --> 00:30:06,799

control communications food and survival

450

00:30:14,320 --> 00:30:10,909

on an untried mission to an unknown

451  
00:30:17,230 --> 00:30:14,330  
celestial body and then return it safely

452  
00:30:20,340 --> 00:30:17,240  
to earth re-entering the atmosphere at

453  
00:30:23,140 --> 00:30:20,350  
speeds of over 25,000 miles per hour

454  
00:30:25,510 --> 00:30:23,150  
causing heat about half that on the

455  
00:30:28,990 --> 00:30:25,520  
temperature of the Sun almost as hot as

456  
00:30:31,539 --> 00:30:29,000  
it is here today and do all this and do

457  
00:30:35,110 --> 00:30:31,549  
all this and do it right and do it first

458  
00:30:45,010 --> 00:30:35,120  
before this decade is out then we must

459  
00:30:50,830 --> 00:30:47,600  
I'm the one who's doing all the work so

460  
00:30:53,330 --> 00:30:50,840  
we get much to stay cool for a minute

461  
00:30:56,030 --> 00:30:53,340  
however I think we're going to do it and

462  
00:30:58,040 --> 00:30:56,040  
I think that we must pay what needs to

463  
00:30:59,660 --> 00:30:58,050

be paid I don't think we ought to waste

464

00:31:02,330 --> 00:30:59,670

any money but I think we ought to do the

465

00:31:05,780 --> 00:31:02,340

job and this will be done in the decade

466

00:31:08,360 --> 00:31:05,790

of the 60s um of you are still here at

467

00:31:10,460 --> 00:31:08,370

school at this college and university it

468

00:31:12,260 --> 00:31:10,470

will be done during the terms of office

469

00:31:14,840 --> 00:31:12,270

of some of the people who sit here on

470

00:31:16,520 --> 00:31:14,850

this platform but it will be done and it

471

00:31:18,680 --> 00:31:16,530

will be done before the end of this

472

00:31:20,720 --> 00:31:18,690

decade and I am delighted that this

473

00:31:23,690 --> 00:31:20,730

university is playing a part in putting

474

00:31:25,970 --> 00:31:23,700

a man on the moon as part of a great

475

00:31:33,919 --> 00:31:25,980

national effort of the United States of

476  
00:31:39,690 --> 00:31:36,630  
many years ago the Great British

477  
00:31:43,590 --> 00:31:39,700  
explorer George Mallory who was to die

478  
00:31:45,990 --> 00:31:43,600  
on Mount Everest was asked why did he

479  
00:31:46,620 --> 00:31:46,000  
want to climb it he said because it is

480  
00:31:51,899 --> 00:31:46,630  
there

481  
00:31:53,970 --> 00:31:51,909  
climb it and the moon and the planets

482  
00:31:56,970 --> 00:31:53,980  
are there and New Hope's for knowledge

483  
00:32:00,659 --> 00:31:56,980  
and peace are there and therefore as we

484  
00:32:02,820 --> 00:32:00,669  
set sail we ask God's blessing on the

485  
00:32:05,519 --> 00:32:02,830  
most hazardous and dangerous and

486  
00:32:47,310 --> 00:32:05,529  
greatest adventure on which man has ever

487  
00:32:56,620 --> 00:32:54,360  
please remain standing God of all space

488  
00:33:00,490 --> 00:32:56,630

who has set the stars in their courses

489

00:33:04,570 --> 00:33:00,500

and who does also dwell in the human

490

00:33:07,750 --> 00:33:04,580

heart god of the lightyears infinite

491

00:33:11,519 --> 00:33:07,760

beyond infinity who does also give

492

00:33:15,100 --> 00:33:11,529

meaning to our brief years to D return

493

00:33:16,930 --> 00:33:15,110

for thy benediction we give thee thanks

494

00:33:20,019 --> 00:33:16,940

O God for the rights with which thou

495

00:33:22,389 --> 00:33:20,029

hast endowed us for the freedoms which

496

00:33:25,269 --> 00:33:22,399

Americans have secured and cherished and

497

00:33:27,340 --> 00:33:25,279

shared for the love of truth and the

498

00:33:30,580 --> 00:33:27,350

dreams of adventure which propel

499

00:33:32,470 --> 00:33:30,590

pioneers out into space we are grateful

500

00:33:35,139 --> 00:33:32,480

for the lofty vision of our president

501  
00:33:38,409 --> 00:33:35,149  
for the intelligence and the eloquence

502  
00:33:41,139 --> 00:33:38,419  
which give wings to his words guide and

503  
00:33:43,389 --> 00:33:41,149  
protect him o father and all who are

504  
00:33:46,529 --> 00:33:43,399  
entrusted with the destiny of this great

505  
00:33:49,539 --> 00:33:46,539  
nation may thy blessing rest upon us all

506  
00:33:52,000 --> 00:33:49,549  
bless us in our homes in our schools in

507  
00:33:54,760 --> 00:33:52,010  
our laboratories our farms our factories

508  
00:33:57,399 --> 00:33:54,770  
our space capsules prosper us in our

509  
00:33:59,320 --> 00:33:57,409  
cities and our states make our country a

510  
00:34:03,870 --> 00:33:59,330  
worthy leader of the free world and