



1
00:00:03,429 --> 00:00:02,070
this is the

2
00:00:05,269 --> 00:00:03,439
international space station flight

3
00:00:06,789 --> 00:00:05,279
control room at nasa's johnson space

4
00:00:09,110 --> 00:00:06,799
center in houston

5
00:00:11,669 --> 00:00:09,120
which is in charge of overall operations

6
00:00:13,749 --> 00:00:11,679
for the station the payload operations

7
00:00:17,189 --> 00:00:13,759
integration center at nasa's marshall

8
00:00:19,670 --> 00:00:17,199
space flight center is in charge of the

9
00:00:21,830 --> 00:00:19,680
working with the crew on science on

10
00:00:24,070 --> 00:00:21,840
board the station and monitoring

11
00:00:26,310 --> 00:00:24,080
autonomous payloads as well there's a

12
00:00:28,790 --> 00:00:26,320
group of scientists at marshall in

13
00:00:30,950 --> 00:00:28,800

huntsville alabama that are leveraging

14

00:00:33,270 --> 00:00:30,960

vantage point of the international space

15

00:00:35,110 --> 00:00:33,280

station in earth orbit to provide some

16

00:00:37,990 --> 00:00:35,120

unsurpassed images

17

00:00:40,549 --> 00:00:38,000

of earth rather than of space

18

00:00:43,110 --> 00:00:40,559

the iserv camera turns its attention to

19

00:00:45,350 --> 00:00:43,120

our home planet taking hundreds of

20

00:00:47,270 --> 00:00:45,360

images a week to record the changing

21

00:00:49,270 --> 00:00:47,280

landscape of the environment

22

00:00:52,069 --> 00:00:49,280

the folks at marshall work with the

23

00:00:54,630 --> 00:00:52,079

iserv team to ensure the camera records

24

00:00:56,869 --> 00:00:54,640

the desired images as the station orbits

25

00:00:59,349 --> 00:00:56,879

the earth bill hubshere at marshall

26
00:01:01,830 --> 00:00:59,359
caught up with burgess howell the iserv

27
00:01:04,070 --> 00:01:01,840
principal investigator who shared some

28
00:01:06,070 --> 00:01:04,080
recently captured images

29
00:01:07,830 --> 00:01:06,080
we've shot about 40 or 45 thousand

30
00:01:09,030 --> 00:01:07,840
frames don't have the count handy right

31
00:01:10,710 --> 00:01:09,040
now

32
00:01:12,630 --> 00:01:10,720
our normal operation mode is we shoot

33
00:01:14,550 --> 00:01:12,640
three frames per second

34
00:01:16,630 --> 00:01:14,560
and we start before we reach a target

35
00:01:18,390 --> 00:01:16,640
and uh end afterwards so

36
00:01:21,590 --> 00:01:18,400
a normal target we will be getting

37
00:01:23,109 --> 00:01:21,600
anywhere from 30 to 150 frames now there

38
00:01:25,109 --> 00:01:23,119

are some targets where we've been

39

00:01:26,710 --> 00:01:25,119

acquiring a lot more data than that the

40

00:01:28,710 --> 00:01:26,720

first one is an area called los

41

00:01:30,069 --> 00:01:28,720

glaciated it's a national park in

42

00:01:32,469 --> 00:01:30,079

argentina it's right on the argentine

43

00:01:33,749 --> 00:01:32,479

and chilean border and it's it's

44

00:01:35,590 --> 00:01:33,759

particularly significant because it's

45

00:01:37,830 --> 00:01:35,600

one of the few areas where there are

46

00:01:40,069 --> 00:01:37,840

glaciers specifically a glacier called

47

00:01:42,149 --> 00:01:40,079

perito moreno which is actually growing

48

00:01:43,990 --> 00:01:42,159

most of the glaciers in that area in

49

00:01:47,910 --> 00:01:44,000

that in that particular glaciation field

50

00:01:49,350 --> 00:01:47,920

there are shrinking but perito moreno is

51
00:01:50,950 --> 00:01:49,360
growing and there's a lot of research

52
00:01:52,950 --> 00:01:50,960
there trying to figure out exactly

53
00:01:54,870 --> 00:01:52,960
what's going on why this one particular

54
00:01:56,870 --> 00:01:54,880
area as opposed to the other areas are

55
00:01:58,630 --> 00:01:56,880
are increasing glaciation is one of

56
00:02:00,550 --> 00:01:58,640
those things that has it's um

57
00:02:02,389 --> 00:02:00,560
it's a fingerprint of what the current

58
00:02:04,389 --> 00:02:02,399
climate is and how how things may be

59
00:02:06,389 --> 00:02:04,399
trending so uh glaciation studies around

60
00:02:08,949 --> 00:02:06,399
the world are very important the next

61
00:02:10,949 --> 00:02:08,959
one is uh is is lake titicaca this

62
00:02:13,350 --> 00:02:10,959
particular image is on the the

63
00:02:16,070 --> 00:02:13,360

northwestern shore of titicaca right at

64

00:02:19,430 --> 00:02:16,080

the border between peru and uh and

65

00:02:20,949 --> 00:02:19,440

bolivia uh titicaca is a very important

66

00:02:23,750 --> 00:02:20,959

area it's a

67

00:02:25,589 --> 00:02:23,760

local huge local fishery it's a

68

00:02:28,470 --> 00:02:25,599

very important local area because of the

69

00:02:30,070 --> 00:02:28,480

tourism business there and it also is a

70

00:02:32,150 --> 00:02:30,080

an indicator of the health of the planet

71

00:02:33,190 --> 00:02:32,160

as the water level rises and falls as

72

00:02:35,270 --> 00:02:33,200

the water quality increases and

73

00:02:36,470 --> 00:02:35,280

decreases it's a good indicator of

74

00:02:38,309 --> 00:02:36,480

what's going on generally in the

75

00:02:40,070 --> 00:02:38,319

environment the next image that we have

76

00:02:41,750 --> 00:02:40,080

is the upper Nile in Sudan this is a

77

00:02:43,750 --> 00:02:41,760

late afternoon shot

78

00:02:45,350 --> 00:02:43,760

you can see there's a pink glow cast

79

00:02:46,790 --> 00:02:45,360

across the landscape from the setting

80

00:02:49,350 --> 00:02:46,800

sun there

81

00:02:50,630 --> 00:02:49,360

the Nile of course is is is critical for

82

00:02:53,270 --> 00:02:50,640

agriculture in the area most of the

83

00:02:55,350 --> 00:02:53,280

population uh in the desert environments

84

00:02:57,190 --> 00:02:55,360

live along riverbanks denial of course

85

00:02:58,309 --> 00:02:57,200

is the the focus of the population in

86

00:03:00,390 --> 00:02:58,319

that area

87

00:03:01,830 --> 00:03:00,400

what you see here is a set of villages

88

00:03:03,589 --> 00:03:01,840

that are interspersed with agriculture

89

00:03:05,830 --> 00:03:03,599

along the banks of the Nile

90

00:03:07,910 --> 00:03:05,840

the Nile itself is the source both

91

00:03:09,990 --> 00:03:07,920

of the water and the fertilization for

92

00:03:12,070 --> 00:03:10,000

those fields

93

00:03:13,670 --> 00:03:12,080

the people in those areas depend on the

94

00:03:15,670 --> 00:03:13,680

the agriculture that's in their local

95

00:03:17,030 --> 00:03:15,680

area to survive and modifications of the

96

00:03:20,550 --> 00:03:17,040

environment the Nile has been

97

00:03:21,509 --> 00:03:20,560

modified uh over the last 50 years or so

98

00:03:23,350 --> 00:03:21,519

to

99

00:03:24,949 --> 00:03:23,360

have some significant effect on on the

100

00:03:27,350 --> 00:03:24,959

ability of the people to conduct their

101

00:03:29,110 --> 00:03:27,360

agricultural activities

102

00:03:31,350 --> 00:03:29,120

next image we've got here is uh is a

103

00:03:33,750 --> 00:03:31,360

volcano this is vulcan san miguel down

104

00:03:35,270 --> 00:03:33,760

in el salvador

105

00:03:36,789 --> 00:03:35,280

one of the activities that we try to

106

00:03:38,550 --> 00:03:36,799

keep up with here is is monitoring as

107

00:03:39,830 --> 00:03:38,560

many volcanoes as possible we like to be

108

00:03:41,110 --> 00:03:39,840

sure that we got a good baseline data

109

00:03:43,270 --> 00:03:41,120

set

110

00:03:45,190 --> 00:03:43,280

vulcan's son miguel is interesting to us

111

00:03:47,030 --> 00:03:45,200

because it erupted very recently it was

112

00:03:49,750 --> 00:03:47,040

it was active as late as late december

113

00:03:51,190 --> 00:03:49,760

of last year 2013.

114

00:03:52,949 --> 00:03:51,200

if you look closely at this image you'll

115

00:03:55,429 --> 00:03:52,959

see that there's a white area there

116

00:03:59,110 --> 00:03:55,439

immediately around the cone that's the

117

00:04:01,589 --> 00:03:59,120

the ash fall from the the most recent

118

00:04:03,990 --> 00:04:01,599

eruption around that there's a pinkish

119

00:04:05,589 --> 00:04:04,000

tan area those are pyroclasts that were

120

00:04:08,149 --> 00:04:05,599

spit out by the uh

121

00:04:09,830 --> 00:04:08,159

by the volcano during the eruption and

122

00:04:12,149 --> 00:04:09,840

then downhill you can see in a few

123

00:04:14,390 --> 00:04:12,159

places where the the sparks from the

124

00:04:16,069 --> 00:04:14,400

volcano have have lit off and burned

125

00:04:17,909 --> 00:04:16,079

some of the surrounding landscape the

126

00:04:19,590 --> 00:04:17,919

the forest at the base of the mountain

127

00:04:21,509 --> 00:04:19,600

there the last image that i was going to

128

00:04:24,469 --> 00:04:21,519

show you today was cedar chacoot

129

00:04:26,469 --> 00:04:24,479

seroshikut is an area in guatemala the

130

00:04:27,749 --> 00:04:26,479

image that you see here is a spot where

131

00:04:29,590 --> 00:04:27,759

they've been having persistent

132

00:04:31,270 --> 00:04:29,600

landslides if you look closely you can

133

00:04:32,870 --> 00:04:31,280

see that the land has slipped the

134

00:04:35,430 --> 00:04:32,880

landslides moving from upper right to

135

00:04:36,870 --> 00:04:35,440

lower left toward the the river there

136

00:04:38,870 --> 00:04:36,880

and you can see that the river itself

137

00:04:40,629 --> 00:04:38,880

has widened at the base of that hill

138

00:04:41,990 --> 00:04:40,639

because of the influx of material coming

139

00:04:42,950 --> 00:04:42,000

down the hill

140

00:04:45,350 --> 00:04:42,960

it

141

00:04:47,350 --> 00:04:45,360

this this particular landslide is is is

142

00:04:49,350 --> 00:04:47,360

persistent and ongoing it's been going

143

00:04:50,950 --> 00:04:49,360

on for quite some time now it affects

144

00:04:53,510 --> 00:04:50,960

the local population that it's dangerous

145

00:04:54,629 --> 00:04:53,520

for them of course but it also um it

146

00:04:56,550 --> 00:04:54,639

also is destroying some of the

147

00:04:58,390 --> 00:04:56,560

agricultural areas as well as modifying

148

00:05:00,150 --> 00:04:58,400

the river flow downstream

149

00:05:02,950 --> 00:05:00,160

these are images that we consider fairly

150

00:05:04,950 --> 00:05:02,960

significant for a variety of purposes a

151

00:05:06,390 --> 00:05:04,960

variety of reasons not just because

152

00:05:08,070 --> 00:05:06,400

they're pretty which which we happen to

153

00:05:10,790 --> 00:05:08,080

think that they are

154

00:05:12,790 --> 00:05:10,800

but because they they they look at they

155

00:05:14,469 --> 00:05:12,800

uh they are pertinent to specific areas

156

00:05:16,150 --> 00:05:14,479

of the research that uh surveil is

157

00:05:17,510 --> 00:05:16,160

involved with and that nasa supports in

158

00:05:19,830 --> 00:05:17,520

general

159

00:05:21,990 --> 00:05:19,840

howell and the iserv group are now

160

00:05:24,469 --> 00:05:22,000

creating a searchable database that

161

00:05:26,550 --> 00:05:24,479

would allow anybody to who has access to

162

00:05:27,830 --> 00:05:26,560

the internet to uh search the photos