



GARY WAGNER

1
00:00:07,990 --> 00:00:05,349
for generations we dreamed about a place

2
00:00:10,230 --> 00:00:08,000
to live and work in space

3
00:00:12,629 --> 00:00:10,240
a place where life up there would

4
00:00:15,669 --> 00:00:12,639
benefit life down here

5
00:00:17,590 --> 00:00:15,679
today that dream has come true

6
00:00:20,470 --> 00:00:17,600
research on the international space

7
00:00:21,349 --> 00:00:20,480
station improves lives all over the

8
00:00:24,390 --> 00:00:21,359
world

9
00:00:25,589 --> 00:00:24,400
the station's benefits for humanity grow

10
00:00:28,150 --> 00:00:25,599
every day

11
00:00:36,470 --> 00:00:28,160
and they can be told by the lives that

12
00:00:41,670 --> 00:00:39,030
our farm is called awg farms started

13
00:00:44,069 --> 00:00:41,680

back in 1975.

14

00:00:45,590 --> 00:00:44,079

it's a family-run farm i have two

15

00:00:47,910 --> 00:00:45,600

brothers now and my son-in-law is in the

16

00:00:53,029 --> 00:00:47,920

operation this is a third generation

17

00:00:57,830 --> 00:00:55,350

main crop is sugar beets

18

00:00:59,670 --> 00:00:57,840

then we have spring wheat

19

00:01:01,990 --> 00:00:59,680

sunflowers

20

00:01:03,910 --> 00:01:02,000

soy beans corn

21

00:01:11,270 --> 00:01:03,920

and once well we'll raise some edible

22

00:01:15,590 --> 00:01:13,830

remote sensing is a way to look at our

23

00:01:17,030 --> 00:01:15,600

crops during the growing season to be

24

00:01:19,270 --> 00:01:17,040

able to determine

25

00:01:24,230 --> 00:01:19,280

if we need to do any monitoring of

26

00:01:28,149 --> 00:01:25,910

the organization over in grand forks

27

00:01:30,149 --> 00:01:28,159

north dakota called umac

28

00:01:34,390 --> 00:01:30,159

that organization put a camera on the

29

00:01:37,030 --> 00:01:35,910

well the biggest problem with satellite

30

00:01:39,510 --> 00:01:37,040

imagery

31

00:01:40,469 --> 00:01:39,520

is the fact that landsat we get every 16

32

00:01:42,870 --> 00:01:40,479

days

33

00:01:44,789 --> 00:01:42,880

and on that 16th day in this region if

34

00:01:46,710 --> 00:01:44,799

we have cloud cover that image is

35

00:01:49,910 --> 00:01:46,720

virtually useless for us so then we have

36

00:01:51,190 --> 00:01:49,920

to wait another 16 days

37

00:01:52,469 --> 00:01:51,200

biggest thing with isaac we would get

38

00:01:53,990 --> 00:01:52,479

much more often

39

00:01:56,550 --> 00:01:54,000

when we want to get that particular

40

00:01:59,910 --> 00:01:56,560

image isaac gave it to us when we wanted

41

00:02:01,830 --> 00:01:59,920

it versus a a more a more rotational

42

00:02:03,429 --> 00:02:01,840

type satellite

43

00:02:04,870 --> 00:02:03,439

they were able to get imagery to us with

44

00:02:06,389 --> 00:02:04,880

a couple bands of light

45

00:02:08,949 --> 00:02:06,399

necessary ones we needed which is near

46

00:02:11,110 --> 00:02:08,959

infrared and red a near-infrared band is

47

00:02:13,750 --> 00:02:11,120

something to do with biomass how the

48

00:02:15,750 --> 00:02:13,760

crop is growing more biomass using more

49

00:02:17,589 --> 00:02:15,760

yield potential

50

00:02:19,110 --> 00:02:17,599

we're able to obtain a piece of software

51
00:02:21,270 --> 00:02:19,120
that's written by a local programmer in

52
00:02:24,070 --> 00:02:21,280
this region that allows us to take these

53
00:02:26,229 --> 00:02:24,080
images and manipulate them into zones

54
00:02:27,990 --> 00:02:26,239
within the field itself

55
00:02:29,430 --> 00:02:28,000
and by doing that we can see different

56
00:02:31,350 --> 00:02:29,440
patterns in the field and within those

57
00:02:34,390 --> 00:02:31,360
patterns we can manage the field

58
00:02:36,869 --> 00:02:34,400
differently based off of biomass or

59
00:02:38,630 --> 00:02:36,879
reflectance of the field itself

60
00:02:40,390 --> 00:02:38,640
it's just a tool that we can use as a

61
00:02:43,430 --> 00:02:40,400
reference to be able to make better

62
00:02:46,390 --> 00:02:43,440
decisions and by doing that our farm is