SMALL SIZE TELESCOPE

A SMALL SIZE LIGHT-CATCHER EXPLAINED WITH SIMPLE WORDS

When light carrying a lot of power from space hits the air around the Earth, a special blue flash of light is made. This small size light-catcher will look for the brightest flashes in the sky as they give out so much light that we only need small mirrors to gather enough light see them. Larger light-catchers can gather too much light from these bright flashes and will not work. Here a pair of small size mirrors points light towards a picture-taker that takes pictures of the brightest flashes which do not happen very often. To give us a better chance of seeing these bright flashes, we will build many of these light-catchers over a large area.

FIRST MIRROR

This is the first mirror that the light from a blue flash will hit. The mirror is cut up into 6 pieces that can each move slightly so that the light is pointed towards the second mirror in the right place. There is a large hole in the centre of this first mirror where there will be a shadow from the second mirror.

SECOND MIRROR

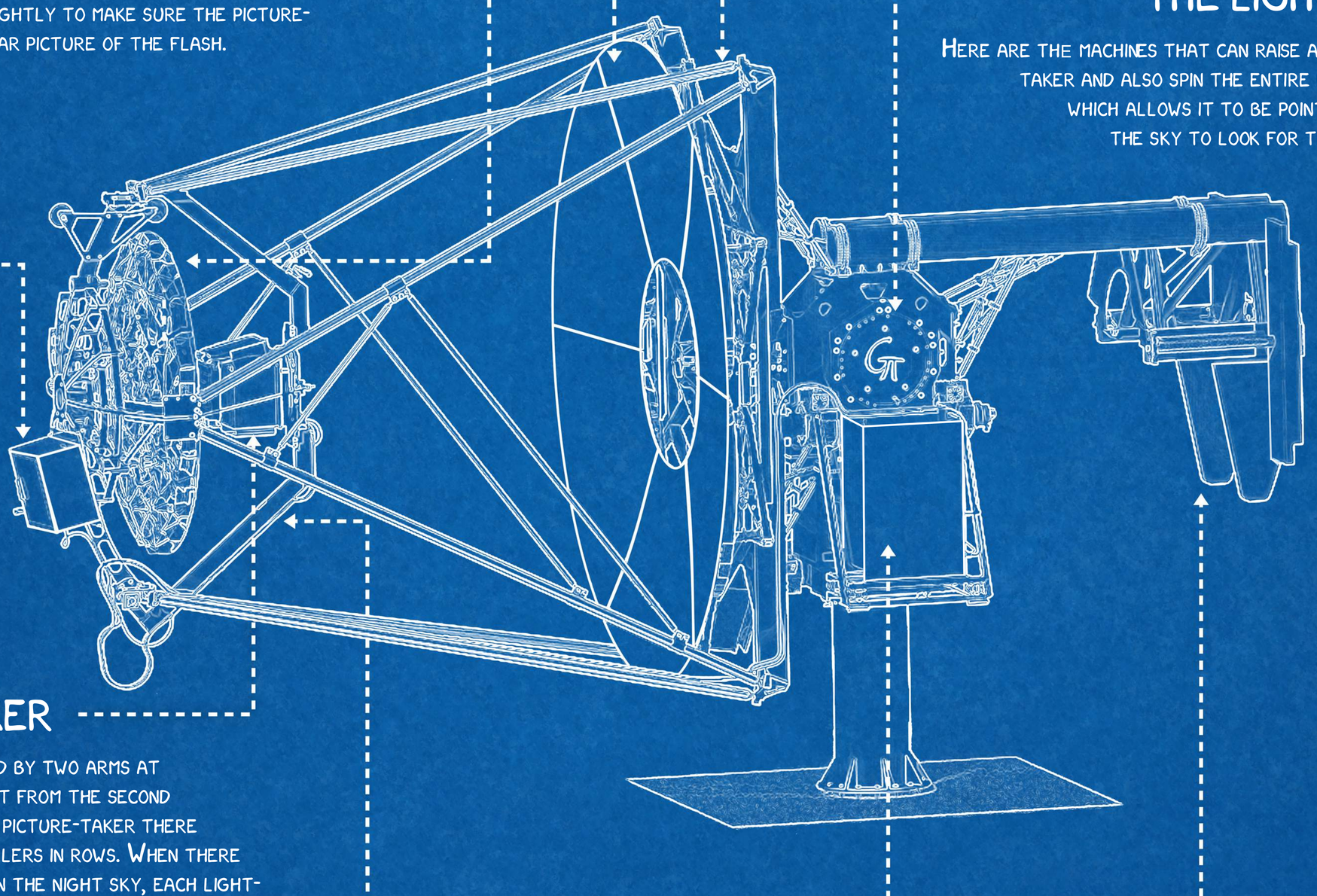
This is where light that comes from the first mirror hits and is pointed towards the picture-taker. It is not cut up into different pieces like the first mirror and is actually one single mirror. This mirror can also change its shape slightly to make sure the picture-taker takes a sharp, clear picture of the flash.

STICKS THAT HOLD THE SECOND MIRROR AND THE PICTURE-TAKER

These sticks hold the second mirror and picture-taker exactly where they need to be. The sticks have to be very strong and not bend so that the picture-taker and second mirror will not move from the perfect spot because we will get bad pictures if they do.

PARTS THAT CAN POINT THE LIGHT-CATCHER

Here are the machines that can raise and lower the picture-taker and also spin the entire light-catcher around, which allows it to be pointed in any direction of the sky to look for the blue light flashes.



POWER BOX

This box gives out power just for the picture-taker. It is placed behind the second mirror so that it's close to the picture-taker.

PICTURE-TAKER

The picture-taker is held by two arms at the point where the light from the second mirrors meets. Inside the picture-taker there are many small light feelers in rows. When there is a blue flash of light in the night sky, each light-feeler checks how much light is hitting it and sends a message to the computers in the control building through the information lines. The computers put all the messages together to make a picture of the flash.

HEAVY WEIGHTS

These heavy weights are made from metal bars and heavy metal plates that can move to make sure there is an even weight on both sides of the machine that raises and lowers the picture-taker. By using these heavy weights, there is less work put on the raising and lowering machine and less power is needed.

ARMS THAT HOLD THE PICTURE-TAKER

These arms hold the picture-taker exactly where the light from the second mirrors meets. The top arm can unlock allowing the picture-taker to swing down and be reached by workers on the ground much more easily.

PICTURE-TAKER COOLER

This box pushes cold water through lines to the picture-taker where the water will warm up and carry away some of the heat. The picture-taker gets warm because it uses a lot of power and by cooling it down we will get clearer pictures of the blue flashes.

A group of over 1,200 people (mostly teachers at schools for grown ups) from 32 countries who want to see light from space with a lot of power. They are building groups of light-catchers in both the North and the South of the Earth at very dark places so it is easier to see the small blue flashes in the night sky.

cta — cherenkov telescope array — UK

TITLE: Small Size Telescope
AUTHOR: James Thomas Wilson
INSPIRATION: Randall Munroe
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