Key words: ALMA

ESOcast 128: Why Astronomers Want to Use ALMA – ALMA Observes the Invisible	
00:00 **[Visuals start]** **ESOcast introduction**	**00:00** **[Visuals start]** ESOcast introduction
00:11 **[Narrator]** 1. What if you could only see one color? Not that everything in the world would be the same color. But you could only see things that were, for example, green. And everything else would be invisible. Not such a pleasant reality, is it? Well, it turns out that in a way it's true!	
00:28 **[Narrator]** 2. When you look around you, your eyes see what scientist call "visible light". And that light, the one we are used to think about, is just a very, very small portion of all the different kinds of light that exist in the Universe. And most of them are invisible to our eyes!	
00:43 **[Narrator]** 3. But there are animals that are not that blind to those kinds of light. That's why snakes can see even during moonless nights. And bees can see the flowers with the biggest amounts of pollen. They can see lights we, humans, can't! Snakes can see infrared light, the same that allows you to see if you put night-vision goggles on; and bees can see ultraviolet, the light that gets your skin burnt unless you protect yourself with sunscreen.	

01:08 **[Narrator]** 4. All these lights are part of the electromagnetic spectrum, where there are also radio waves, microwaves, x-rays and gamma rays, all the other lights we can't see, but are essential to our daily life. Microwaves are used to heat up your food and x-rays, that can go through skin, are used by doctors to see your bones.	
01:27 **[Narrator]** 5. The thing is: the story of the Universe… of galaxies, stars and planets, is told through all these different lights! And because our eyes are no good to see beyond the visible light, astronomers created new eyes that allowed them to see far more: telescopes that can see the invisible lights! ALMA is one of those telescopes. It can see radio waves.	
01:48 **[Narrator]** 6. Some places in the Universe look dark to our eyes, but shine bright in radio waves. The places where stars are born, for example, are full of dust which blocks visible light and, therefore, they are very dark, but radio telescopes like ALMA can see straight through that dust. They can see stars being born! They allow the study of things impossible to study otherwise: like galaxies that are very, very far away, or even the birth of other star systems like our own .	
02:19 **[Outro]**	*Produced by ESO, the European Southern Observatory.* *Reaching new heights in Astronomy*