A astronomía accesible

Astroaccesible: Usando los sonidos como recurso

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ONCE

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FUNDACIÓN ESPAÑOLA PARA LA CIENCIA Y LA TECNOLOGÍA

GOBIERNO DE ESPAÑA
MINISTERIO DE ECONOMÍA, INDUSTRIA Y COMPETITIVIDAD

Objetivos

- Los objetivos del proyecto son:

- Enseñar astronomía y ciencia **de manera inclusiva.**.

- Proporcionar materiales y estrategias para la **divulgación accesible** de la ciencia.

- **Dar visibilidad** a investigadores y divulgadores con una discapacidad visual.

- **Sensibilizar** al colectivo de divulgadores para que divulguen de manera accesible.

La baja visión

Ciencia diversa

Nature (08/06/2018)

Science benefits from diversity

Improving the participation of under-represented groups is not just fairer — it could produce better research.

Lab groups, departments, universities and national funders should encourage participation in science from as many sectors of the population as possible. It's the right thing to do — both morally and to help build a sustainable future for research that truly represents society.

A more representative workforce is more likely to pursue questions and problems that go beyond the narrow slice of humanity that much of science (biomedical science in particular) is currently set up to serve. Widening the focus is essential if publicly funded research is to protect and preserve its mandate to work to improve society. For example, a high proportion of the research that comes out of the Western world uses tissue and blood from white individuals to screen drugs and therapies for a diverse population. Yet it is well known that people from different ethnic groups can have different susceptibility to some diseases.

Many people are working to improve diversity in science and the scientific workforce. Some have been trying hard for decades, but not all are succeeding. This week, *Nature* highlights examples of success from across the world. They are inspiring, and show what can — and must — be done.

To boost recruitment and participation in science among some under-represented groups is difficult. Statistics from the US National Science Foundation show that the representation of minority ethnic groups in the sciences would need to more than double to match the groups' overall share of the US population.

As we highlight in a Careers piece this week (page 149), there are steps that groups, departments and institutions can take to try to draw from a broader pool of talent. Some of these demand effort to reach out to under-represented communities, to encourage teenagers who might otherwise not consider science as an option. Even the wording of job advertisements can put people off — candidates from some backgrounds might be less likely to consider themselves 'outstanding' or 'excellent', and so might not even apply. Yet diversity efforts should not stop when people are through the door. To retain is as important as to recruit — mentoring and support is essential for all young scientists, and especially so for those who have been marginalized by academic culture.

Projects to boost participation are often the passion and work of a few dedicated individuals. More institutions and funders should seek, highlight and support both the actions and the individuals.

There are moral and ethical reasons for institutions to act. And there are other potential benefits, too. Firms are recognizing that diversity — and associated attitudes and behaviours — is a business issue. A report from consultancy firm McKinsey earlier this year was just the latest to set out the healthy relationship between a company's approach to inclusion and diversity and its bottom line. The report, *Delivering through Diversity*, reaffirms the positive link between a firm's financial performance and its diversity — which it defines in terms of the proportion of women and the ethnic and cultural composition of the leadership of large companies.

Could something similar be true in science? As we discuss in a News Feature this week (page 19), some studies suggest that a team with a good mix of perspectives is associated with increased productivity.

"The lack of diversity in science is everyone's problem."

Concerted action to effect change on recruitment and retention can and does make a difference (see T. Hodapp and E. Brown *Nature* **557**, 629–632; 2018). More effort across the board is overdue. The lack of diversity in science is everyone's problem. Everyone has a responsibility to look around them, to see the problem for what it is, and to act — not just to assume it is someone else's job to fix it. ■

Targeting cancer

Cancer treatments tailored to individual tumours must not be oversold.

Cancer specialist Leonard Saltz received a letter earlier this year from someone who had watched a television programme about the promise of 'precision oncology'. A patient had taken a few pills and seen his tumour disappear, the letter said. Could the same be done for his sick father?

Saltz, who works at Memorial Sloan Kettering Cancer Center in New York City, was distressed. "That's what people think precision oncology is," he says. "And, gosh, I wish that were so."

It's not unusual for the promise and perception of new cancer treatments to run ahead of the reality. And it's true that precision oncology is promising. The practice — which relies on finding weak spots in a particular tumour's genetic make-up that can be targeted by drugs — is growing, and new results feature strongly this week at the annual meeting of the American Society of Clinical Oncology in Chicago, Illinois — cancer medicine's biggest annual meeting. But talk of potential benefits must be tempered by clinical reality.

Over the past decade, advances in genomic sequencing and analysis have yielded a steady stream of information about the genetic mutations that can drive cancer. The studies have revealed that even cancers of the same type, such as breast tumours, can be very different genetically. From that has grown the hope that drugs can be tailored to a tumour's genetic anomalies, resulting in a treatment with, ideally, fewer side effects and greater efficacy than conventional therapies. A handful of such drugs are already on the market. One, Herceptin (trastuzumab), has already increased survival rates for women with particular types of breast cancer.

This model of precision oncology is now at a turning point, as some

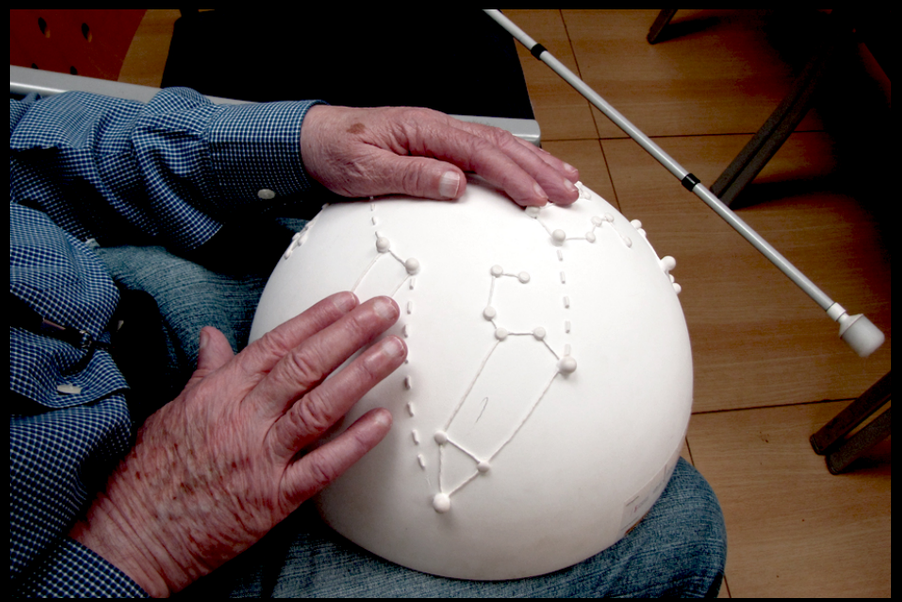
Actividades

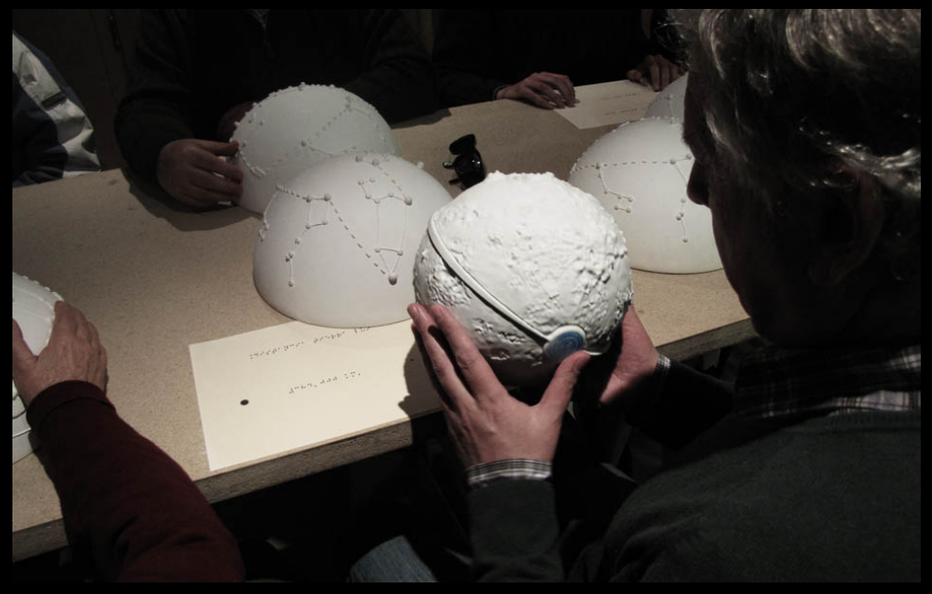
-**Talleres y conferencias** presenciales en centros de la ONCE, en asociaciones y en centros de enseñanza de todos los niveles.

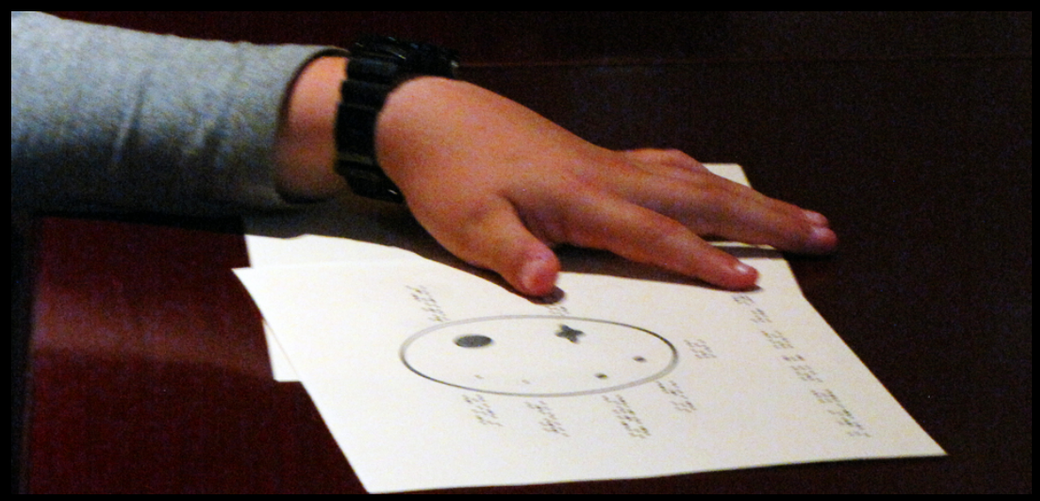
- **Publicación** de artículos, videos y audios

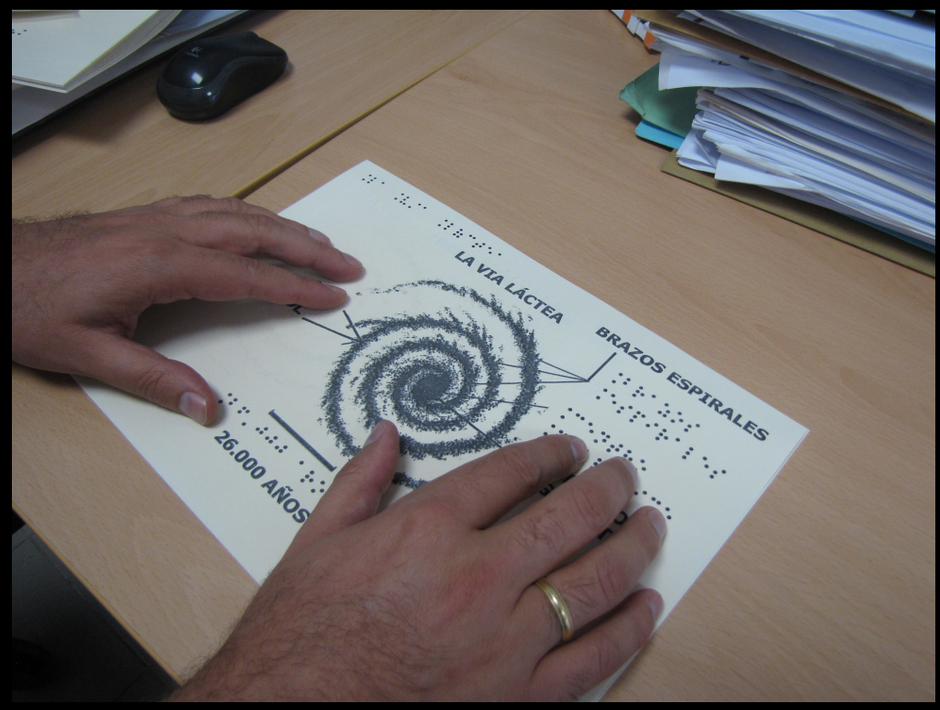
- **Participación** en medios, foros y congresos para incrementar la concienciación.

Medios y materiales









Página web

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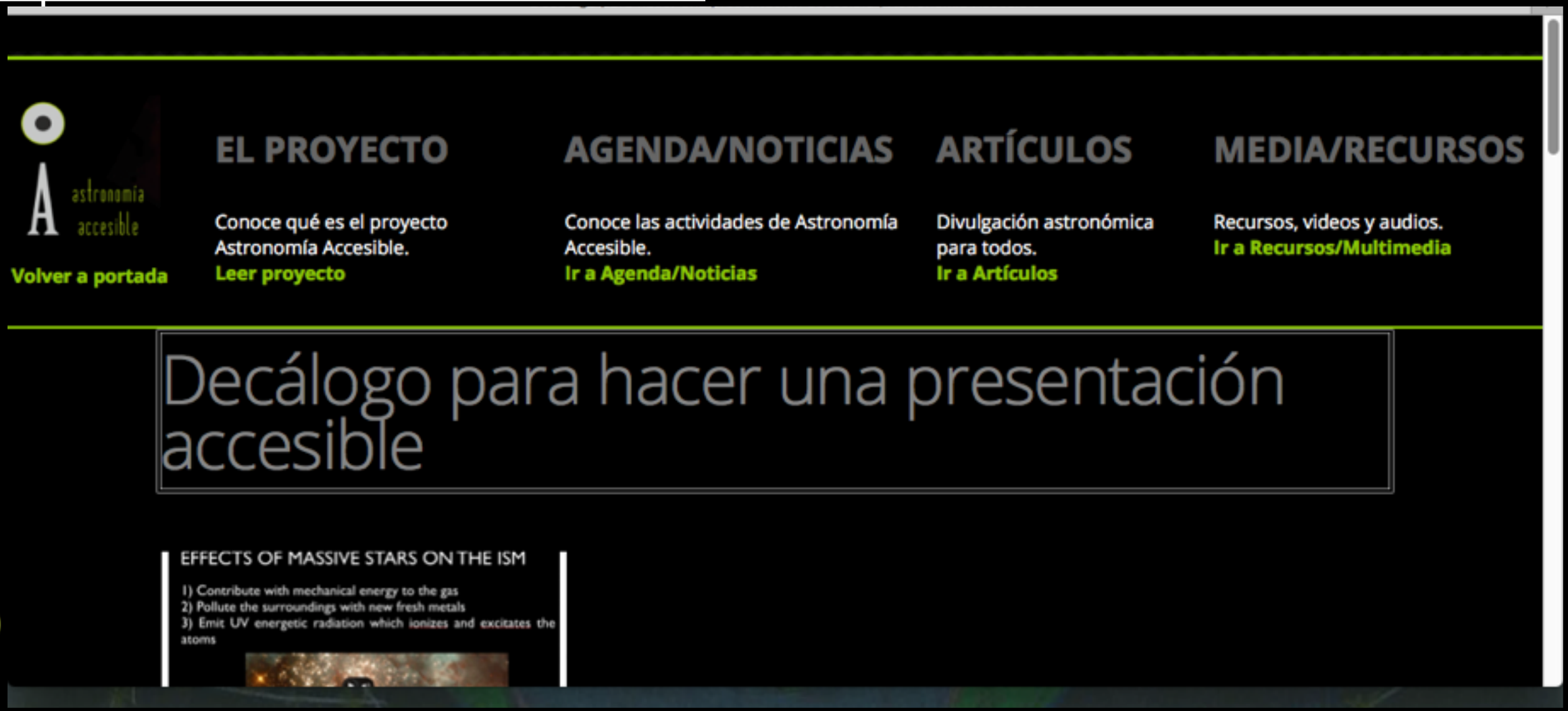

Redes sociales

- facebook.com/astroaccesible.iaa.es

Talleres en la ONCE

De primaria a bachillerato

- IES Vicente Cano (Argamasilla de Alba)
- Granada. Noche de los investigadores
- Campus inclusivo Universidad de Granada
- Aula científica de la Fac. Ciencias de la UGR
- Semana de la Ciencia 2017 y 2018
- Jornadas Baja Visión Begisare (San Sebastián)
- Jornada sensibilización ONCE en Almería. (Febrero 2018)

Salidas y excursiones

Desierto de Tabernas
(Septiembre 2018)

Observatorio de Calar Alto
(Septiembre 2017)

Enseñando a divulgar

Participación en congresos y jornadas de divulgación:

- III Jornadas I+D Innovación Divulgativa. Zaragoza. Octubre 2015
- I, II y III Jornadas de Ciencia Inclusiva. UCM. Madrid. Diciembre 2015,IAA-CSIC, Granada, Noviembre 2016 y UAM (Dic. 2017)
- Reunión científica Sociedad Española Astronomía: Teruel 2014, Bilbao 2016, Salamanca 2018.
- Open-day de la Agencia Espacial Europea en el centro ESTEC (Noordwijk, Holanda)-
- Seminario Internacional de Traducción Accesible del Patrimonio (Granada, Marzo 2018)
- Congreso Inclusiva (Fac. CC. Educación UGR, Marzo 2018)
- III Jornada por una Universidad Inclusiva (UAM, Abril 2018)
- Jornadas Asociación Española Personal Rehabilitación Visual (Murcia, Mayo 2018)

Asesoramiento en otros proyectos divulgativos similares (p.ej. Agronomía Accesible, Estación Experimental Zaidín - CSIC)

Space in

Space In(Ciencia Espacial inclusiva) es una red de científicos que colaboran para divulgar la ciencia espacial de manera accesible.

Eventos 2017:

- 5/6 Junio: Centro ESAC Agencia Espacial Europea (Villafranca del Castillo, Madrid)
- 11 Noviembre Space In Castilla La Mancha (Sede ONCE Toledo)

Muchas gracias

astronomía accesible

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