



**INDONESIA  
DEVELOPMENT  
FORUM 2019**  
INSPIRE · IMAGINE · INNOVATE · INITIATE



**Kementerian PPN/  
Bappenas**



**Australian Government**

# Optimasi angkatan kerja dengan penguatan STEAM



**Premana W. Premadi**

**Observatorium Bosscha  
Institut Teknologi Bandung**



# Mempertemukan Langit dan Bumi

4 QUALITY EDUCATION



Capacity building:  
Schools, workshops,  
teacher training

5 GENDER EQUALITY



Workshops with gender  
equity focus

6 CLEAN WATER AND SANITATION



11 SUSTAINABLE CITIES AND COMMUNITIES



Community programs  
at observatory

7 AFFORDABLE AND CLEAN ENERGY



Light pollution, dark skies

8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



Astro-tourism:  
Instrument support

10 REDUCED INEQUALITIES

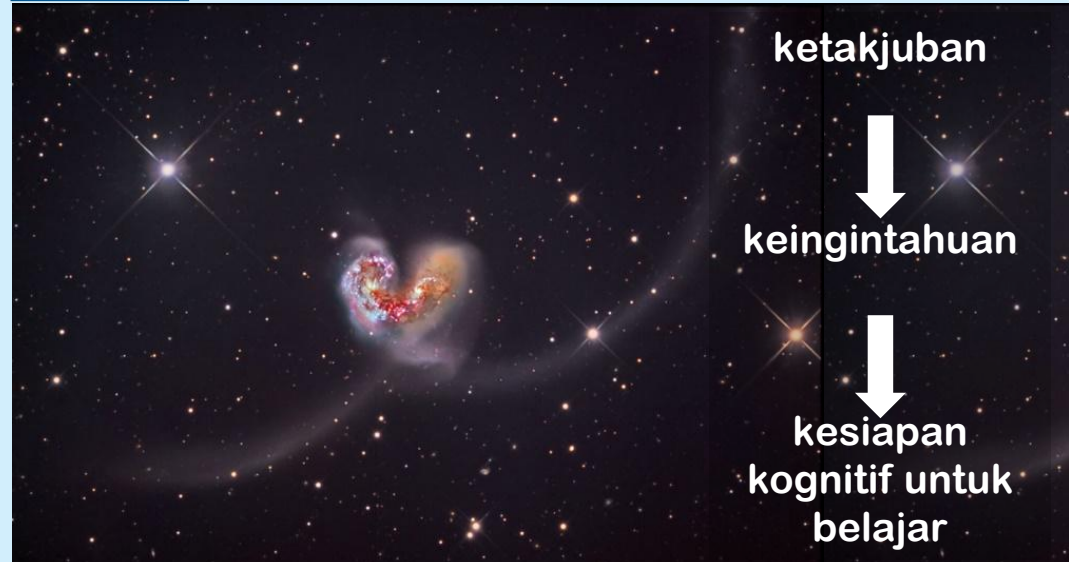


Activities target  
disadvantaged,  
under-represented groups

16 PEACE, JUSTICE AND STRONG INSTITUTIONS



Astronomy for  
diplomacy



ketakjaban



keingintahuan



kesiapan  
kognitif untuk  
belajar



# The Pillars of Creation

The Arts in STEAM builds  
relation

$$\int d^3k e^{i\vec{k}\cdot\vec{x}} \frac{-G}{(2\pi)^{\frac{3}{2}}} \frac{1}{(k^2 + \mu^2)}$$
$$= \frac{-G}{(2\pi)^3} \int d^3k \frac{e^{i\vec{k}\cdot\vec{x}}}{(k^2 + \mu^2)}$$
$$= \frac{-2\pi G}{(2\pi)^3} \int k^2 dk \int_{-1}^1 \frac{e^{ikr \cos \theta}}{(k^2 + \mu^2)}$$
$$= \frac{-G}{(2\pi)^2} \int \frac{k^2}{(k^2 + \mu^2)} \int_{-1}^1 e^{ikr \cos \theta}$$
$$= \frac{-G}{(2\pi)^2} \int \frac{k^2}{(k^2 + \mu^2)} \left[ \frac{1}{ikr} e^{ikr} - \frac{1}{ikr} e^{-ikr} \right]$$
$$= \frac{-G}{(2\pi)^2 ir} \int \frac{k}{(k^2 + \mu^2)} (e^{ikr} - e^{-ikr})$$
$$= \frac{-G}{(2\pi)^2 ir} \int_0^\infty \frac{k}{(k + i\mu)(k - i\mu)} (e^{ikr} - e^{-ikr})$$

engage

perceive

imagine

rationalize

express

communicate

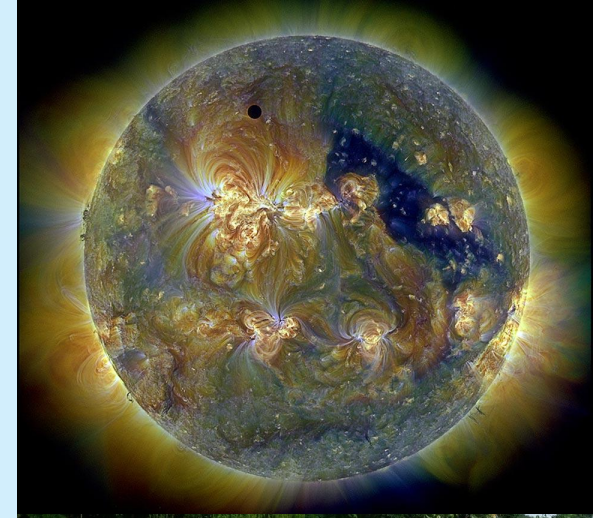
create

# Menutup Kesenjangan

## Desa dan Observatorium Membangun Bersama

Pendidikan dan pelatihan: sumber energi terbarukan dan konsumsi energi

Pengenalan skema penguatan ekonomi masyarakat berbasis sumber energi terbarukan



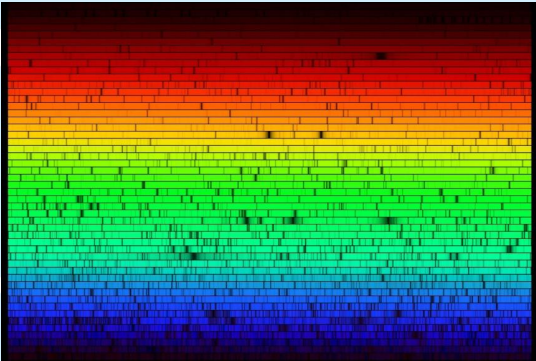


# Sumber Air Bersih Alami dan Pengelolaan Air

Transparansi kerja sistem

Kemudahan replikasi

# Pembentukan karakter melalui STEAM



kesungguhan

kejujuran

keadilan

inklusif

proaktif

keterbukaan

kerjasama