Anti-hurricane gun

Ilija Barukčić[1]

[1] Internist, Horandstrasse, DE-26441 Jever, Germany

Correspondence: Ilija Barukčić, Horandstrasse, DE-26441 Jever, Germany. Tel: 0049-(0)4466-333. E-mail: Barukcic@t-online.de

Received: July 31, 2019; Accepted: July 31, 2019; Published: July 31, 2019

Abstract

Objective: Hurricanes are natural disasters of epic proportions. An effective help is not in sight.

Methods: Thales' basic proportionality theorem (i.e. intercept theorem) was reviewed and used for the calculations in this publication.

Results: The strategy developed in this paper provides effective measures to control this gigantic monster by an Anti-Hurricane gun. The same machine is equally of use to transform desert into very fertile agricultural land or to protect human mankind against deadly impacts of asteroids.

Conclusion: The technical details of an anti-hurricane gun are ready for use.

Keywords: Climate change, Hurricane, Help

1. Introduction

The climate of our Earth is determined by several factors one of which are environmental changes caused by human activity too. Higher ocean temperatures at deeper depths are able to feed earth based, rapidly rotating and circulating (Coriolis effect) storm systems which are characterized by several features like low-pressure center, strong rotating winds, high waves (due to winds), heat energy away carrier and heavy and extreme rainfall producer et cetera. As a result, depending on location and strength, even if such hurricanes weaken quite rapidly over land, the effects on human populations and the social and economic resources are often devastating. Hurricanes are the most damaging of all-natural disasters in the very young history of mankind.

Especially the United States coastal shoreline counties are vulnerable to hurricane damage. *Hurricane Katrina* hit Louisiana on *August 29, 2005* and was by far the most aggressive and the most destructive natural disaster in U.S. history. The total economic impact (Vigdor, 2008) was extremely high, lowered U.S. production, increased unemployment at the end up at $250 billion US Dollars high. In point of fact, U. S. coastal shoreline counties create 40% of America's jobs and are more or less responsible for 46% of U. S. gross domestic product. Thus far, the U. S. *Congressional Budget Office* estimates the expected *annual* hurricane damage costs up to $54 billion U.S. Dollar (Hall, 2019), equivalent to 0.3 percent of U.S. current gross domestic product. These average *annual* hurricane damage costs will increase by time. Following Julius (Oppenheimer, 1927) Robert Oppenheimer (1904 – 1967), hurricanes "*become Death, the destroyer of worlds*." (Hijiya, 2000). In point of fact, one effective strategy could be to *destroy the destroyer* with effective counter-measures. However, hurricanes are equally creator of the worlds too, since the heavy rainfall of hurricanes provide world's population among other with great amount of fresh water (Annamalai, Slingo, Sperber, & Hodges, 1999) too. Thus far, hurricanes as the most natural and most gigantic freshwater production machines on our planet should not be destroyed but controlled by effective measures to minimize the expected storm losses and their effects on human society and nature as such.

2. Material and Methods

Assumed that it is allowed to treat a hurricane to some extent as an enemy, the logic of the military (Sun (5th century BC), 1963) may be helpful in controlling this natural monster. In a flank attack, the military does not attack an opponent head-on. However, there are circumstances too, where *a head-on attack straight forward into the heart of an enemy* can be necessary and successful too. Hurricane's primary energy source (Emanuel, 1986) is the heat from the evaporation of water (*Carnot heat engine*) from the surface of a warm ocean, previously heated by sunshine. The weather in the eye of a hurricane is normally calm and free of clouds even if the sea may be extremely violent. The environment near the eye, *the heart of a hurricane*, is normally circular in shape, and typically 30–65 km (19–40 mi) in diameter and warmer than the surroundings (Annamalai et al., 1999). One of the strategies to control hurricanes effectively can be the control of the eye of a hurricane by the help of physics.

2.1 Definitions

Definition 2.1.1. (Sun)

The Sun, the star at the center of our Solar System, lies in the Local Interstellar Cloud or the Gould Belt close to the inner rim of the Milky Way's Orion Arm at a distance of 25 000–28 000 light-years from the Center of the Milky Way (Reid, 1993). In about 225–250 million years, the Sun completes one orbit through the Milky Way. The equatorial radius of our sun is about 696 342 km (Emilio, Kuhn, Bush, & Scholl, 2012). The equatorial diameter of the sun is about **1392684** km (864 000 miles) or 109 times that of Earth.

Definition 2.1.2. (Earth)

Our Earth is the third astronomical object from the Sun. Earth's point of greatest distance the Sun is about 152 100 000 km (Aphelion) away from the Sun. Earth's point of least distance to the Sun is about 147 095 000 km (Perihelion). Earth's mean radius is about 6371 km (3958,8 mi) while Earth's equatorial radius is 6378,1 km (3963,2 mi). The mean diameter of the Earth is about 12742 km while *Earth's equatorial diameter* is about 12756,2 km.

Definition 2.1.3. (Moon)

Earth's Moon is a permanent natural satellite and between 362 600 km (Perigee) and 405 400 km (Apogee) away from Earth while Moon's average orbital distance is about **384 402 km** (238 856 mi) (Scott, 2016). Moon's mean equatorial *radius* is about 1738,1 km (mean equatorial *diameter*: 3476,2 km)

Definition 2.1.4. (Solar eclipse)

Solar eclipse is a natural phenomenon which occurs in the daytime at new moon when the Moon is between the Earth and the Sun and the Earth passes through the shadow of its own Moon. In a total eclipse, the disk of the Sun is more or less fully obscured by the Moon. The *umbra*, the inner core of total darkness, is the central region of the shadow of a solar eclipse. The *Moon's umbral shadow on the Earth* is at most *267 km* across.

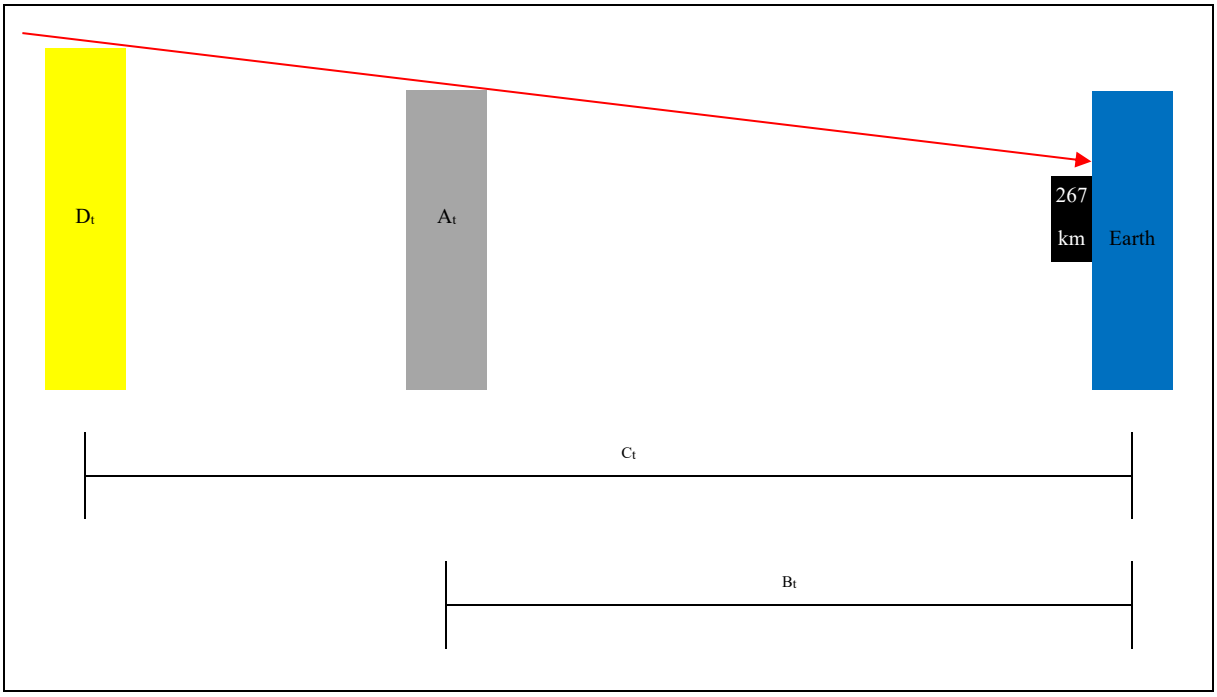
Definition 2.1.5. (Geostationary orbit)

A geostationary orbit is more or less a circular orbit *35 786* km (22 236 mi) above Earth's equator which is following the direction of Earth's rotation. An object in a geostationary orbit appears at a fixed position in the sky and motionless to Earth's ground observers.

Definition 2.1.6. (Thales' theorem)

Thales' basic proportionality theorem (i.e. intercept theorem) is used for the calculations and viewed by the following Table 1.

Table 1. Thales theorem



Thales' basic proportionality theorem is defined as

$$\frac{D_t}{A_t} \equiv \frac{C_t}{B_t} \tag{1}$$

or as

$$(A_t \times C_t) \equiv (B_t \times D_t) \tag{2}$$

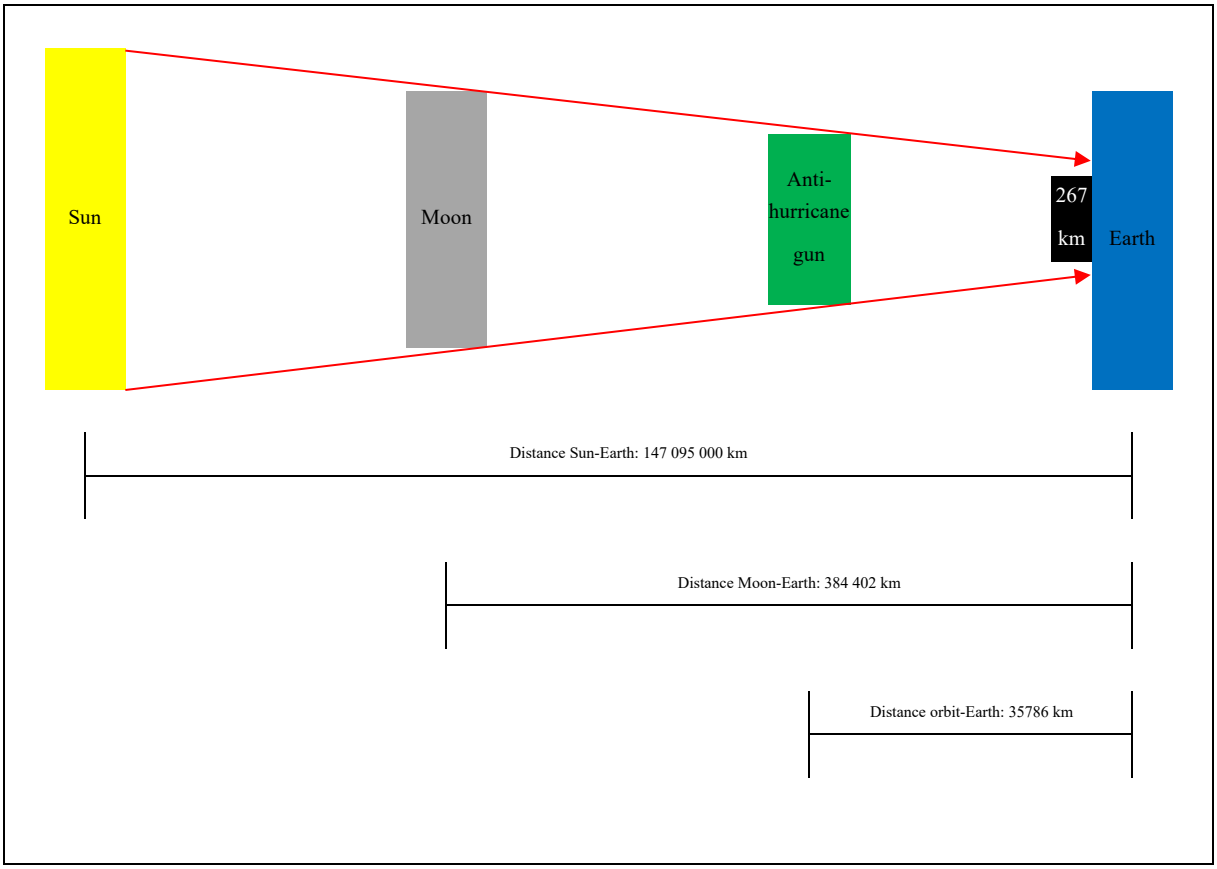
The value of A_t follows as

$$A_t \equiv \frac{(B_t \times D_t)}{C_t} \tag{3}$$

Definition 2.1.7. (Position of the anti-hurricane gun)

The anti-hurricane gun is located at a geostationary orbit between the Sun and the Earth. Table 2 may illustrate this position.

Table 2.



2.2 Material

2.2.1. Anti-hurricane gun: Sunlight collector

The hurricane gun functions as a solar thermal collector is concentrating the sunlight. One part of the collected sunlight is directed selectively to a point outside the hurricane gun. Another part of the collected sunlight is converted into energy for the need of the hurricane gun itself. A military use of the collected sunlight or of the hurricane gun is excluded.

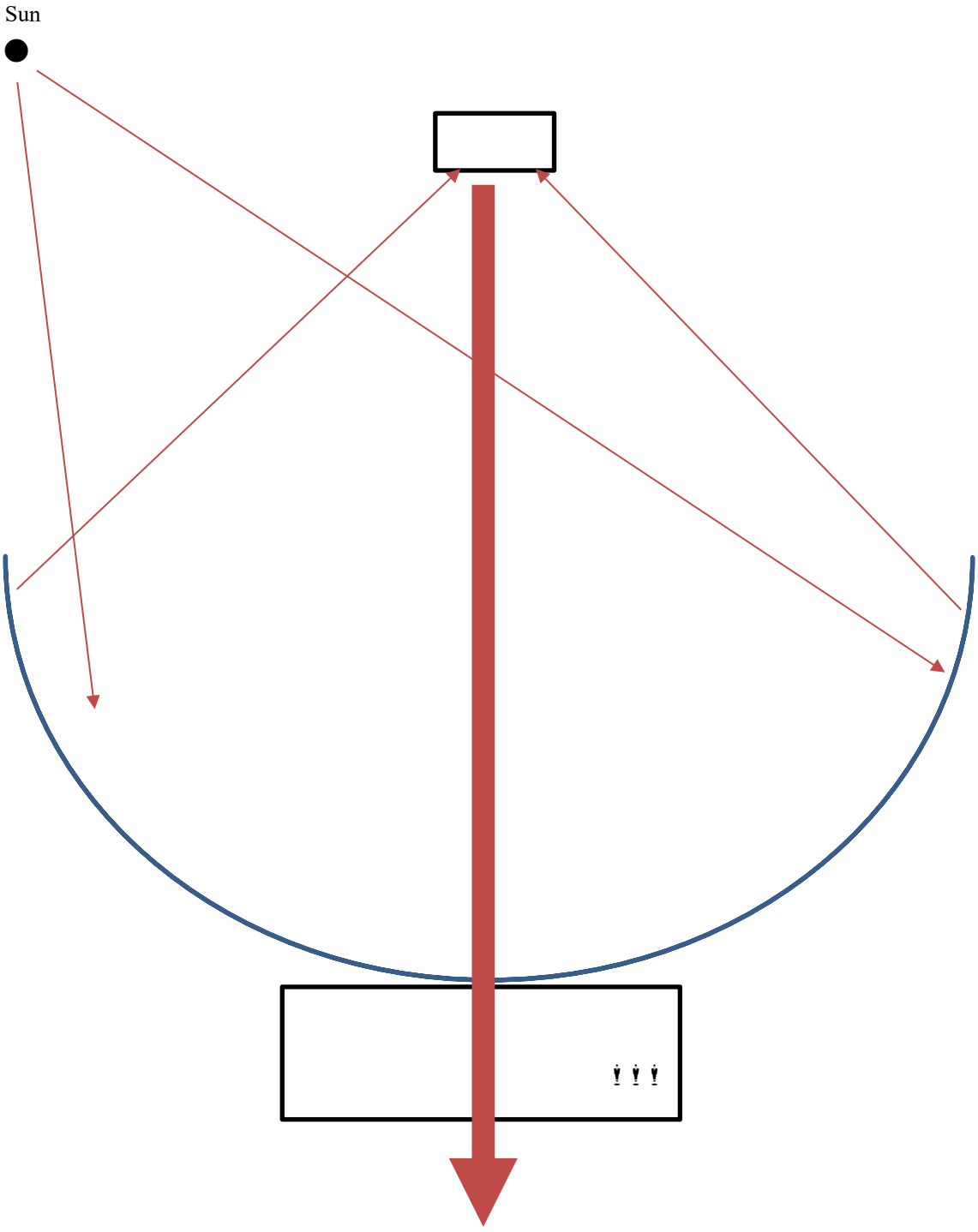
Example:

Concentrated sunlight generates solar power by using mirrors or lenses or other devices to concentrate a large area of sunlight onto a small area. *Electricity* can be generated (even on the moon and other planet) when the concentrated light is converted to heat (solar thermal energy), which drives i.e. a (steam) turbine connected to an electrical power generator et cetera. This concentrated sunlight can be used as an engine for *interplanetary journey* or as a weapon to protect human mankind against a *deadly asteroid impact* event. *Terra forming* would be another possibility to use the anti-hurricane gun. Such an anti-hurricane gun has nothing to do with *the Death Star*, the mobile galactic superweapon featured by *Star Wars* ®.

2.2.2. Anti-hurricane gun: A parasol

Anti-hurricane gun is located between Sun and Earth and functions as a type of umbrella made for protection of a certain area on Earth from the Sun. The following **table 3** may illustrate the technical details.

Table 3. Schematic drawing of an anti-hurricane gun

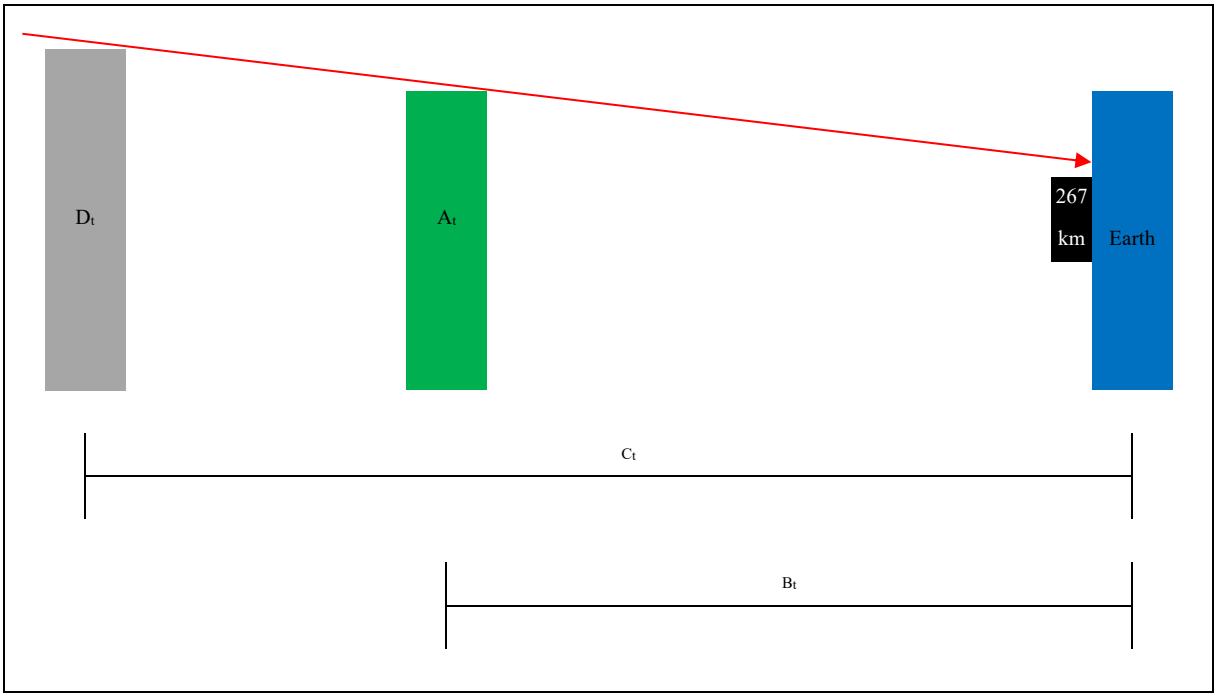


3. Results

Theorem 3.1. (The diameter of the anti-hurricane gun.)

The goal of the anti-hurricane gun is to produce a shadow on the Earth comparable to *Moon's umbral shadow on the Earth* about *267 km* across. In the following, Thales' basic proportionality theorem (i.e. intercept theorem) is used to calculate the diameter A_t of an Anti-hurricane gun. The following **table 4** may provide an overview.

Table 4. The diameter A_t of an anti-hurricane gun.



Claim.

In order to produce a shadow on the Earth comparable to *Moon's umbral shadow on the Earth* of about *267 km* across, the diameter of an anti-hurricane gun A_t follows as

$$A_t \equiv \frac{(35786\,(km) \times 3476{,}2\,(km))}{384402\,(km)} = 323{,}62\,(km) \tag{4}$$

Proof.

Thales' basic proportionality theorem is defined as

$$\frac{D_t}{A_t} \equiv \frac{C_t}{B_t} \tag{5}$$

Rearrangin, it is

$$(A_t \times C_t) \equiv (B_t \times D_t) \tag{6}$$

The diameter of the Anti-hurricane gun A_t follows as

$$A_t \equiv \frac{(B_t \times D_t)}{C_t} \tag{7}$$

B_t is the distance between Earth and the position of the Anti-hurricane gun at the geostationary orbit. We obtain

$$A_t \equiv \frac{(35786\ (km) \times D_t)}{C_t} \tag{8}$$

while D_t is the diameter of the moon. The equation before changes to

$$A_t \equiv \frac{(35786\ (km) \times 3476{,}2\ (km))}{C_t} \tag{9}$$

The distance Moon – Earth is C_t = 384 402 km. We obtain

$$A_t \equiv \frac{(35786\ (km) \times 3476{,}2\ (km))}{384402\ (km)} \tag{10}$$

In order to produce a shadow on the Earth comparable to *Moon's umbral shadow on the Earth* of about *267 km* across, the diameter of an anti-hurricane gun A_t follows as

$$A_t \equiv \frac{(35786\ (km) \times 3476{,}2\ (km))}{384402\ (km)} = 323{,}62\ (km) \tag{11}$$

Quod erat demonstrandum.

4. Discussion

Nearly every major publication is, in some way, is dependent on the possibility of being related to objective reality too. However, do we humans have the right to go even far beyond possible science fiction without making a fool of oneself publicly. How real can it be to realize a project more than 30000 km away with a diameter of more than 300 km while even the first Death Star, introduced in the original Star Wars ® film, was only about 100 km in diameter? However, the benefits of an Anti-hurricane gun are enormous while there are none significant risks. Thus far, even an impossible and unimaginable and very long march starts with the first step.

5. Conclusion

An Anti-hurricane gun has unimaginable protective potentials.

Conflict of interest

Author declare no conflict of interests for this article.

Acknowledgement

None.

References

Annamalai, H., Slingo, J. M., Sperber, K. R., & Hodges, K. (1999). The Mean Evolution and Variability of the Asian Summer Monsoon: Comparison of ECMWF and NCEP–NCAR Reanalyses. *Monthly Weather Review*, *127*(6), 1157–1186. doi: https://doi.org/10.1175/1520-0493(1999)127<1157:TMEAVO>2.0.CO;2

Emanuel, K. A. (1986). An Air-Sea Interaction Theory for Tropical Cyclones. Part I: Steady-State Maintenance. *Journal of the Atmospheric Sciences*, *43*(6), 585–605. doi: https://doi.org/10.1175/1520-0469(1986)043<0585:AASITF>2.0.CO;2

Emilio, M., Kuhn, J. R., Bush, R. I., & Scholl, I. F. (2012). MEASURING THE SOLAR RADIUS FROM SPACE DURING THE 2003 AND 2006 MERCURY TRANSITS. *The Astrophysical Journal*, *750*(2), 135. doi: https://doi.org/10.1088/0004-637X/750/2/135

Hall, K. (2019). Expected Costs of Damage From Hurricane Winds and Storm-Related Flooding. *United States Congressional Budget Office*, *4*(10), 1–48. Retrieved from https://www.cbo.gov/system/files/2019-04/55019-ExpectedCostsFromWindStorm.pdf

Hijiya, J. A. (2000). The Gita of Robert Oppenheimer. *Proceedings of the American Philosophical Society.*, *144*(2), 123–167. Retrieved from http://www.amphilsoc.org/sites/default/files/proceedings/Hijiya.pdf

Oppenheimer, J. R. (1927). Zur Quantentheorie kontinuierlicher Spektren. *Zeitschrift für Physik A Hadrons and nuclei*, *41*(4), 268–293. doi: https://doi.org/10.1007/BF01391242

Reid, M. J. (1993). The Distance to the Center of the Galaxy. *Annual Review of Astronomy and Astrophysics*, *31*(1), 345–372. doi: https://doi.org/10.1146/annurev.aa.31.090193.002021

Scott, E. (2016). *Our moon: new discoveries about earth's closest companion*. Boston, Mass.: Houghton Mifflin Harcourt. Retrieved from http://public.eblib.com/choice/publicfullrecord.aspx?p=4385429

Sun (5th century BC), T. (1963). *The art of war*. New York, Oxford University Press. Retrieved from http://archive.org/details/artofwargriff00sunz

Vigdor, J. (2008). The Economic Aftermath of Hurricane Katrina. *Journal of Economic Perspectives*, *22*(4), 135–154. doi: https://doi.org/10.1257/jep.22.4.135