

A breakdown of some major METI transmissions and their approximate durations

- Arecibo Message (1974): 168 seconds (This is a well-documented figure, just under 3 minutes).
- Morse Message (1962): The first message from Evpatoria Planetary Radar.¹ Sources indicate it consisted of short radio transmissions.² One source (Space Artefacts) lists two transmissions to Librae: one as "2m 10s?" (130 seconds) and another as "5m 10s?" (310 seconds). Let's use these figures cautiously due to the question marks.
- Cosmic Call 1 (1999): Sent from Evpatoria RT-70.³
 - \circ $\;$ The scientific part (DDM, BM, AM, ESM) was sent three times at 100 bit/s.
 - The public part (PP) was sent once at 2000 bit/s.

- One source (Wikipedia) mentions that each of the four transmission sessions (to different stars) of Cosmic Call 1 was 3 hours and 55 minutes. (3 hours * 3600s/hr + 55 minutes * 60s/min = 10800 + 3300 = 14100 seconds per session). If there were four such sessions, that's 14100 * 4 = 56400 seconds.
- Another source (Astronomy Now) mentions a total of "41 hours of total METI transmission time that humans have conducted so far" *as of May 2010*, largely referencing Alexander Zaitsev's work which includes Cosmic Calls and Teen Age Message. This 41 hours would be 41 * 3600 = 147,600 seconds.⁴ This is a cumulative figure up to that point by that group.
- Teen Age Message (TAM) (2001): Also from Evpatoria.
 - Sent to six stars.⁵ Each transmission had three sections: a 10-minute sounding signal, a 15-minute theremin concert, and digital data. So, roughly 25 minutes per transmission session if we don't count the digital data transmission time which might be short for the core message part. 25 minutes * 60s/min = 1500 seconds per session. For six sessions, this would be 1500 * 6 = 9000 seconds.
 - The Space Artefacts list gives a duration of 2 hours and 12 minutes (7920 seconds) for *each* of the 6 TAM transmissions. This would total 7920 * 6 = 47520 seconds. This is a more specific figure per target.
- Cosmic Call 2 (2003): From Evpatoria.
 - The scientific messages (ISR, AM, BIG, BM, ESM) totaled 500,472 bits and took 53 minutes to transmit for each session (53 * 60 = 3180 seconds).
 - The Public Messages (PP) were 220 megabytes and took approximately 11 hours (11 * 3600 = 39600 seconds) in total for all sessions combined.
 - Space Artefacts lists five transmissions for Cosmic Call 2, each lasting 2 hours and 5 minutes (7500 seconds). This would be 7500 * 5 = 37500 seconds. This likely refers to the scientific part being repeated or the structure per star. The 11 hours for public messages seems to be a separate, large data dump.
- **Poetica Vaginal (1986):** Listed as "20 minutes?" (1200 seconds) by Space Artefacts.
- Doritos Advertisement (2008): Transmitted from EISCAT.⁶ Listed as 6 hours (6 * 3600 = 21600 seconds) by Space Artefacts.
- Across the Universe (Beatles song) (2008): 3 minutes 48 seconds (228 seconds).
- Lone Signal (2013): This project aimed for continuous transmission of short, 144-character messages.⁷ It began on June 17, 2013, but "ceased transmission shortly after it began, due to lack of funding." The exact total duration is hard to pinpoint but was likely not extremely long in terms of unique, structured METI content comparable to the others, though the beacon might have run for some

days or weeks. The "hailing message" was designed to repeat.

• **METI International Messages (e.g., to GJ273b in 2017):** Durations for these specific new messages need to be found. A "New Arecibo Message" project is also being discussed with a more extensive message.

Using the Space Artefacts list as a more comprehensive source for individual deliberate messages (though some durations have question marks):

- 1. Morse Message (Nov 19, 1962): ~2m 10s = 130s (?)
- 2. Morse Message (Nov 24, 1962): ~5m 10s = 310s (?)
- 3. Arecibo Message (1974): < 3 minutes = 168s (given by user and widely cited)
- 4. Poetica Vaginal (1986): ~20 minutes = 1200s (?)
- 5. Cosmic Call 1 (May 24, 1999): 3h 55m = 14100s
- 6. Cosmic Call 1 (June 30, 1999): 3h 55m = 14100s (seems to be two targets on this date)
- 7. **Cosmic Call 1 (July 1, 1999):** 3h 55m = 14100s (another target, making it 4 x 3h 55m based on Wikipedia's description of 4 sessions)
 - \circ Total for Cosmic Call 1 from this approach: 14100 * 4 = 56400 seconds.
- Teen Age Message (Aug 29, 2001 Sep 4, 2001): 6 transmissions, each 2h 12m (7920s).⁸ Total = 7920 * 6 = 47520s.
- Cosmic Call 2 (July 6, 2003): 5 transmissions listed, each 2h 05m (7500s). Total = 7500 * 5 = 37500s. (This likely covers the scientific part. The 11 hours of "Public Messages" for Cosmic Call 2 (39600s) seems to be an additional, distinct component).
- 10. Across the Universe (2008): 3m 48s = 228s
- 11. Doritos Advertisement (2008): 6h = 21600s

Let's sum these:

- Arecibo: 168s
- Morse (approx): 130s + 310s = 440s
- Poetica Vaginal (approx): 1200s
- Cosmic Call 1 (4 sessions): 56400s
- Teen Age Message (6 sessions): 47520s
- Cosmic Call 2 (Scientific, 5 sessions): 37500s
- Cosmic Call 2 (Public Messages): 39600s (This was a separate 11-hour transmission)
- Across the Universe: 228s
- Doritos Ad: 21600s

Total from this selection = 168 + 440 + 1200 + 56400 + 47520 + 37500 + 39600 + 228 + 21600 = **204,656 seconds**.

This is approximately **56.85 hours**.

The "41 hours of total METI transmission time" mentioned by Astronomy Now in 2010 (147,600 seconds) seems to align with the major efforts from Evpatoria up to that point (Cosmic Call 1, Teen Age Message, and parts of Cosmic Call 2). If we take that as a base for those specific campaigns and add others:

- Zaitsev's group transmissions (Cosmic Calls, TAM, etc.) as of 2010: ~41 hours = 147,600s
- Arecibo Message: 168s
- Morse Messages (estimate): 440s
- Poetica Vaginal (estimate): 1200s
- Across the Universe: 228s
- Doritos Ad: 21600s
- Potentially other smaller messages or more recent ones post-2010 (e.g., from METI International, Lone Signal's actual brief operational time).

Using the 41 hours (147,600s) for the bulk of Zaitsev's work (which includes Cosmic Call 1, TAM, and Cosmic Call 2 transmissions from Evpatoria) and adding other distinct efforts:

- Major Evpatoria Campaigns (Zaitsev et al. up to ~2008/2010): 147,600 s (approx. 41 hours)
- Arecibo Message (1974): 168 s
- Morse Message (1962, using mid-estimates): (130+310)/2 = 220 s (or sum = 440s, let's use sum) = 440 s
- Poetica Vaginal (1986): 1200 s (20 minutes)
- "Across the Universe" (Beatles song, 2008): 228 s
- Doritos Advertisement (2008): 21,600 s (6 hours)
- Lone Signal (2013): Operated briefly. The "hailing message" was intended to repeat. If it ran for even a few days transmitting a repeating beacon and some user messages, the total airtime could add up, but the *unique METI content* duration is harder to quantify as a single block. Let's consider its unique structured message attempt as relatively short compared to others for now, unless specific logs are found.
- METI International (e.g., Sónar message to GJ 273b in 2017/2018): These were multiple transmissions. For example, the Sónar messages were sent over three days in October 2017, for several hours each day. A second set was sent in May

2018. Durations reported: "The first transmissions were made between October 16 and 18, 2017, consisting of a total of 99 kbytes of data, sent in bursts of either 33 or 45 minutes duration, three times each day." This would be (33 to 45 min) * 3 times/day * 3 days. Let's take an average of 39 minutes: 39 * 3 * 3 = 351 minutes = 21060 seconds for the 2017 transmissions.

Adding the METI International (GJ 273b, 2017) to the sum: 147,600 (Evpatoria major campaigns)

- 168 (Arecibo)
- 440 (Morse)
- 1200 (Poetica Vaginal)
- 228 (Beatles)
- 21,600 (Doritos)
- 21,060 (METI Int'l GJ 273b 2017 set) = 192,296 seconds

This is roughly **53.4 hours**.

Conclusion

It's hard to give a single precise number down to the second for *all* attempts, as documentation and definitions of an "attempt" can vary. However, based on the major, publicly documented METI projects:

- Arecibo Message: 168 seconds.
- Major Yevpatoria Campaigns (Cosmic Call 1 & 2, Teen Age Message): These are the most significant in terms of duration, totaling around 41-50 hours (approximately 147,600 to 180,000 seconds) depending on how individual components are summed and accounted for. The detailed breakdown above gives around 143,520 seconds for these if we sum CC1 (56400) + TAM (47520) + CC2 Scientific (37500) + CC2 Public (39600) = 181,020 seconds.
- Other notable transmissions (Morse, Poetica Vaginal, Doritos Ad, Beatles song, METI International's newer messages) add several more hours.

Combining the more detailed estimates:

The sum of 204,656 seconds (approx. 56.85 hours) calculated earlier by summing individual major documented transmissions seems like a reasonable comprehensive estimate for the unique transmission blocks.

A figure in the range of **190,000 to 210,000 seconds (or roughly 53 to 58 hours)** seems to be a well-supported estimate for humanity's more significant, dedicated

METI transmission times combined. This includes the Arecibo message and the bulk of the other major efforts.

Final Answer Formulation:

- 1. Acknowledge Arecibo: 168 seconds.
- 2. Discuss other major campaigns (Cosmic Calls, Teen Age Message) and their substantial durations (tens of hours).
- 3. Include other known messages with their durations.
- 4. Provide a summed estimate, noting the inherent uncertainties and variations in how "attempts" are counted. The detailed sum of 204,656 seconds seems to be the most thorough based on current search.Calculating the precise total number of seconds for all of humanity's combined efforts at Messaging Extraterrestrial Intelligence (METI) is challenging due to varying documentation and the nature of different projects. However, we can create a strong estimate based on major known transmissions.

The **Arecibo Message (1974)** was a very short transmission, lasting **168 seconds** (just under 3 minutes).

Beyond Arecibo, several other significant METI projects have contributed much more substantial transmission times:

- 1. **The Morse Message (1962):** The first deliberate radio message.⁹ It consisted of at least two transmissions from the Yevpatoria Planetary Radar. Durations are somewhat uncertain but estimated at around 130 seconds and 310 seconds, totaling approximately **440 seconds**.
- 2. **Cosmic Call 1 (1999):** Transmitted from the Yevpatoria RT-70 telescope to four different stars.¹⁰ Each of these four transmission sessions lasted approximately 3 hours and 55 minutes (14,100 seconds).
 - Total for Cosmic Call 1: 4 sessions * 14,100 seconds/session = 56,400 seconds.
- 3. **Teen Age Message (2001):** Also from Yevpatoria, this project targeted six stars. Each transmission lasted about 2 hours and 12 minutes (7,920 seconds).
 - Total for Teen Age Message: 6 sessions * 7,920 seconds/session = 47,520 seconds.
- 4. Cosmic Call 2 (2003): Another Yevpatoria project.
 - The scientific message portion was transmitted to five target stars, with each session taking about 53 minutes (3,180 seconds), but these messages (like

the Arecibo message and others) were repeated multiple times per session. More detailed logs suggest each of the five full scientific transmission sessions lasted about 2 hours and 5 minutes (7,500 seconds). Total for scientific part: 5 sessions * 7,500 seconds/session = **37,500 seconds**.

- Additionally, Cosmic Call 2 included a large "Public Message" component transmitted over approximately **11 hours (39,600 seconds)** in total across all targets.
- 5. Other Notable Transmissions:
 - **Poetica Vaginal (1986):** Approximately 20 minutes = **1,200 seconds**.
 - "Across the Universe" (Beatles song, 2008): Transmitted from Madrid Deep Space Communication Complex, lasted 3 minutes and 48 seconds = 228 seconds.
 - **Doritos Advertisement (2008):** Transmitted from EISCAT Svalbard Radar, lasted for 6 hours = **21,600 seconds**.
 - METI International (e.g., Sónar Beacon to GJ 273b, 2017-2018): These involved multiple transmissions over several days. The 2017 transmissions alone consisted of bursts totaling approximately 351 minutes = 21,060 seconds. Further transmissions were made in 2018.

Summing these major efforts:

- Arecibo Message: 168 seconds
- Morse Message: 440 seconds
- Cosmic Call 1: 56,400 seconds
- Teen Age Message: 47,520 seconds
- Cosmic Call 2 (Scientific): 37,500 seconds
- Cosmic Call 2 (Public): 39,600 seconds
- Poetica Vaginal: 1,200 seconds
- Across the Universe: 228 seconds
- Doritos Advertisement: 21,600 seconds
- METI International (GJ 273b 2017 only): 21,060 seconds

Estimated Total = 225,716 seconds

This sum is approximately **62.7 hours**.

Based on available data for the most significant and well-documented projects, humanity's combined efforts at directly messaging extraterrestrial intelligence amount to approximately **225,700 seconds**, or about **62.7 hours**. This figure primarily represents the actual transmission times of specifically crafted messages.