



**APOLLO 11
CELEBRATED ITS
50TH ANNIVERSARY
LAST MONTH**

**I AM OLD ENOUGH
TO REMEMBER THE
ORIGINAL MISSION
IN 1969**

**IN 1969 I WAS A BIG
FAN OF ANYTHING
CONNECTED TO
SPACE**



**IN 2019 I'M STILL
A BIG FAN OF
ANYTHING
CONNECTED TO
SPACE**

**SUNDAY 14TH JULY
I'M SITTING AT MY
DESKTOP WORKING
ON MY TALKS**

**“THERE SHOULD BE
A TWITTERBOT
CELEBRATING
APOLLO 11”**

**“IT COULD TWEET
THE MISSION
TIMELINE IN REAL
TIME”**

**“WRITING THAT
MIGHT BE MORE
INTERESTING THAN
WRITING TALKS”**

**TIME PASSES
(ABOUT 90
MINUTES)**

Tweets
189Following
78Followers
177

Following



Apollo 11 at 50

@apollo11at50

Retweeting the Apollo 11 mission in real time (well, time-shifted by 50 years)
[Made by @davorg]

📍 Between the Earth and the Moon

🔗 github.com/davorg/apollo11

📅 Joined July 2019

Tweet to Apollo 11 at 50

Tweets

Tweets & replies



Apollo 11 at 50 @apollo11at50 · 17h

TV transmission ended. (1969-07-23T01:26:00 UTC) [#apollo11](#) [#apollo50](#) 🌐

🌐 Translate Tweet



Apollo 11 at 50 @apollo11at50 · 18h

TV transmission started. (1969-07-23T01:08:00 UTC) [#apollo11](#) [#apollo50](#) 🌐

🌐 Translate Tweet



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@APOLLO11AT50

HOW TO BUILD A TWITTERBOT (IN FOUR MINUTES)

**DATA +
CODE +
IMAGES**

DATA

GOOGLE “APOLLO 11 MISSION TIMELINE”

Apollo 11 Timeline

Event	GET (hhh:mm:ss)	GMT Time	GMT Date
Terminal countdown started.	-028:00:00	21:00:00	14 Jul 1969
Scheduled 11-hour hold at T-9 hours.	-009:00:00	16:00:00	15 Jul 1969
Countdown resumed at T-9 hours.	-009:00:00	03:00:00	16 Jul 1969
Scheduled 1-hour 32-minute hold at T-3 hours 30 minutes.	-003:30:00	08:30:00	16 Jul 1969
Countdown resumed at T-3 hours 30 minutes.	-003:30:00	10:02:00	16 Jul 1969
Guidance reference release.	-000:00:16.968	13:31:43	16 Jul 1969
S-IC engine start command.	-000:00:08.9	13:31:51	16 Jul 1969
S-IC engine ignition (#5).	-000:00:06.4	13:31:53	16 Jul 1969
All S-IC engines thrust OK.	-000:00:01.6	13:31:58	16 Jul 1969
Range zero.	000:00:00.00	13:32:00	16 Jul 1969
All holddown arms released (1 st motion).	000:00:00.3	13:32:00	16 Jul 1969
Liftoff (umbilical disconnected) (1.07 g).	000:00:00.63	13:32:00	16 Jul 1969
Tower clearance yaw maneuver started.	000:00:01.7	13:32:01	16 Jul 1969
Yaw maneuver ended.	000:00:09.7	13:32:09	16 Jul 1969
Pitch and roll maneuver started.	000:00:13.2	13:32:13	16 Jul 1969
Roll maneuver ended.	000:00:31.1	13:32:31	16 Jul 1969
Mach 1 achieved.	000:01:06.3	13:33:06	16 Jul 1969
Maximum dynamic pressure (735.17 lb/ft ²).	000:01:23.0	13:33:23	16 Jul 1969
Maximum bending moment (33,200,000 lbf-in).	000:01:31.5	13:33:31	16 Jul 1969
S-IC center engine cutoff command.	000:02:15.2	13:34:15	16 Jul 1969
Pitch maneuver ended.	000:02:40.0	13:34:40	16 Jul 1969
S-IC outboard engine cutoff.	000:02:41.63	13:34:41	16 Jul 1969
S-IC maximum total inertial acceleration (3.94 g).	000:02:41.71	13:34:41	16 Jul 1969
S-IC maximum Earth-fixed velocity. S-IC/S-II separation command.	000:02:42.30	13:34:42	16 Jul 1969
S-II engine start command.	000:02:43.04	13:34:43	16 Jul 1969
S-II ignition.	000:02:44.0	13:34:44	16 Jul 1969
S-II aft interstage jettisoned.	000:03:12.3	13:35:12	16 Jul 1969
Launch escape tower jettisoned.	000:03:17.9	13:35:17	16 Jul 1969
Iterative guidance mode initiated.	000:03:24.1	13:35:24	16 Jul 1969
S-IC apex.	000:04:29.1	13:36:29	16 Jul 1969
S-II center engine cutoff.	000:07:40.62	13:39:40	16 Jul 1969
S-II maximum total inertial acceleration (1.82 g).	000:07:40.70	13:39:40	16 Jul 1969
S-IC impact (theoretical).	000:09:03.7	13:41:03	16 Jul 1969
S-II outboard engine cutoff.	000:09:08.22	13:41:08	16 Jul 1969
S-II maximum Earth-fixed velocity. S-II/S-IVB separation command.	000:09:09.00	13:41:09	16 Jul 1969
S-IVB 1st burn start command.	000:09:09.20	13:41:09	16 Jul 1969
S-IVB 1st burn ignition.	000:09:12.20	13:41:12	16 Jul 1969
S-IVB ullage case jettisoned.	000:09:21.0	13:41:21	16 Jul 1969
S-II apex.	000:09:47.0	13:41:47	16 Jul 1969
S-IVB 1 st burn cutoff.	000:11:39.33	13:43:39	16 Jul 1969
S-IVB 1 st burn maximum total inertial acceleration (0.69 g).	000:11:39.41	13:43:39	16 Jul 1969

SCREEN-SCRAPING

SCREEN-SCRAPING DATA MUNGING

**SCREEN-SCRAPING
DATA MUNGING
STICK IN A
DATABASE**

CODE

**NET::TWITTER
IS YOUR
FRIEND**

**YOU NEED A
TWITTER
DEVELOPER
ACCOUNT**

[HTTPS://GITHUB.COM/DAVORG/APOLLO11](https://github.com/davorg/apollo11)

IMAGES

**NO-ONE EVER
ACCUSED NASA
OF NOT TAKING
ENOUGH PHOTOS**

**BONUS: ALL OF
NASA'S PHOTOS
ARE AVAILABLE
FOR REUSE**

DEPLOYMENT

GITHUB

TRAVIS-CI

DOCKER

AWS ECS

МЛН

**GIT CHECKOUT
REAL COMPUTER
CRONJOB**

**FIRST COUPLE
OF TWEETS
DIDN'T WORK**

**I AM
NOT A
SYSADMIN, OK!**



Apollo 11 at 50 @apollo11at50 · Jul 16

Liftoff (umbilical disconnected) (1.07 g). (1969-07-16T13:32:00 UTC) [#apollo11](#)

[#apollo50](#) 🙄





Apollo 11 at 50 @apollo11at50 · Jul 20

LM lunar landing. (1969-07-20T20:17:39 UTC) [#apollo11](#) [#apollo50](#) 🌐



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Apollo 11 at 50 @apollo11at50 · Jul 21



1st step taken lunar surface (CDR). "That's one small step for a man, one giant leap for mankind." (1969-07-21T02:56:15 UTC) [#apollo11](#) [#apollo50](#) 🌕



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UNICODE

FAIL!

**THE MOST
IMPORTANT TWEET
IN THE SERIES**

**EASY FIX
THOUGH**

**IT'LL WORK
IN 2029**

**IT HASN'T
FINISHED
TWEETING YET**

**STILL THREE
TWEETS
TO GO**

**YOU'LL HAVE TO
FOLLOW
TO SEE WHEN
THEY APPEAR**

@APOLLO11AT50

@DAVORG

