

Wayback Machine for Legal Use Cases

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[American Association of Law Libraries
Annual Meeting & Conference](#)

18 July 2022



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What can you do w/ IAWM?

- find public, historical web content that's gone
- establish when information may have been publicly available on the web
 - when first published
 - when updated
 - when absent
- examples:
 - patent disclosures
 - use of marks or copyrighted materials
 - terms of service
 - advertised claims regarding products or services
 - business relationships



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Internet Archive

- non-profit digital library
- “universal access to all knowledge”
- provides free public access to collections of all types of digital materials



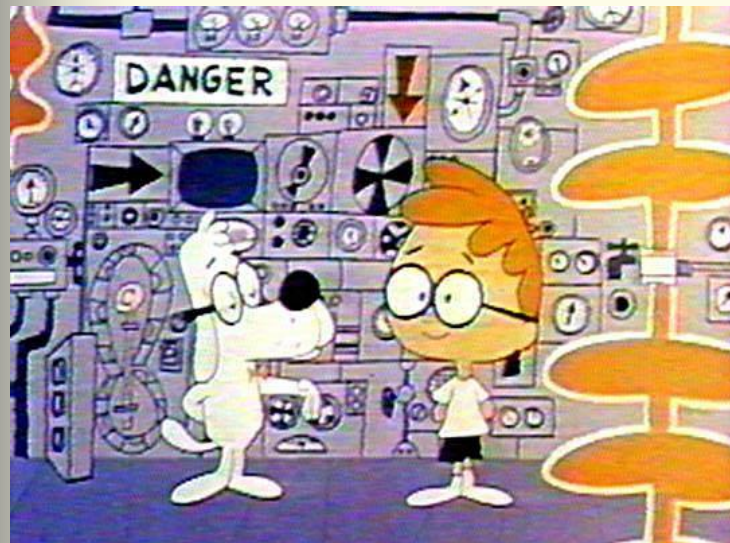
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IAWM

- free, open archive of websites 1996 – present
- web content is both culturally significant + ephemeral
- IAWM referenced in:
 - [a 2002 patent application](#)
 - [a 2003 PTAB proceeding](#)
 - [a 2004 U.S. federal court case](#)

INTERNET ARCHIVE
WayBackMachine

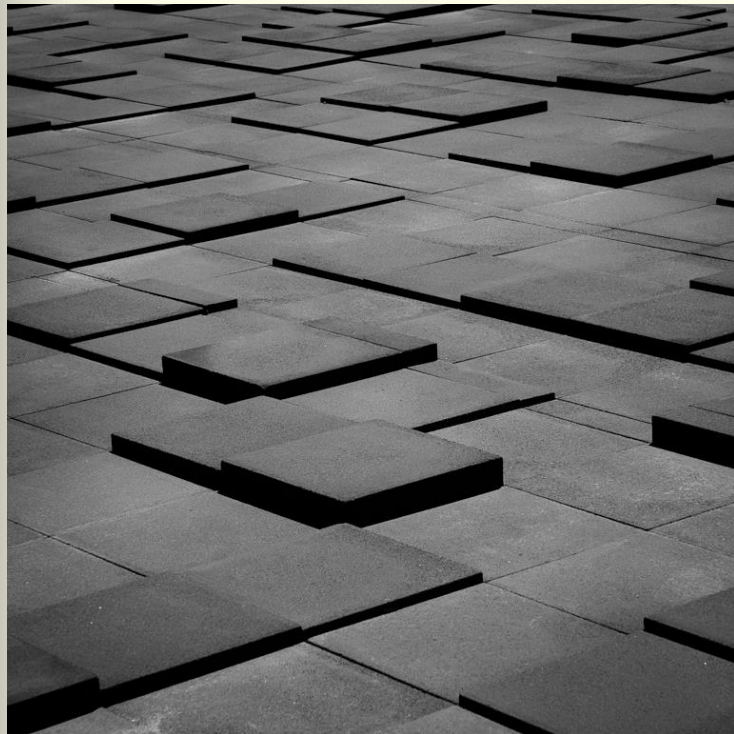


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IAWM archival coverage

- “best effort” archive
- popular + more recent content is better archived
- content of interest to cultural heritage orgs is increasingly better archived



"Irregular paving" by [Stephen Edmonds](#) under [CC BY-SA 2.0](#)

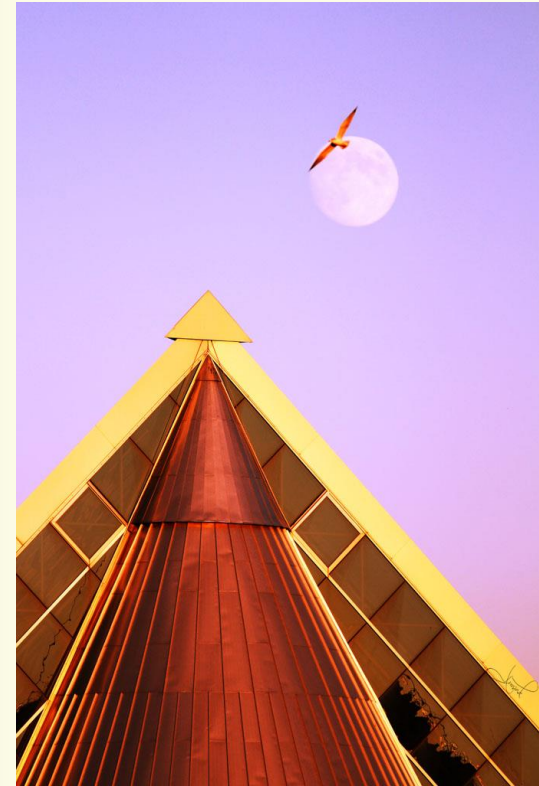


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Scaling web archiving

- more web archiving since IAWM launch
- web archiving tools have also improved
- web archiving is more curated
- more dynamic + more private web



"\$72M Expansion" by [tsaiproject](#) under [CC BY 2.0](#)

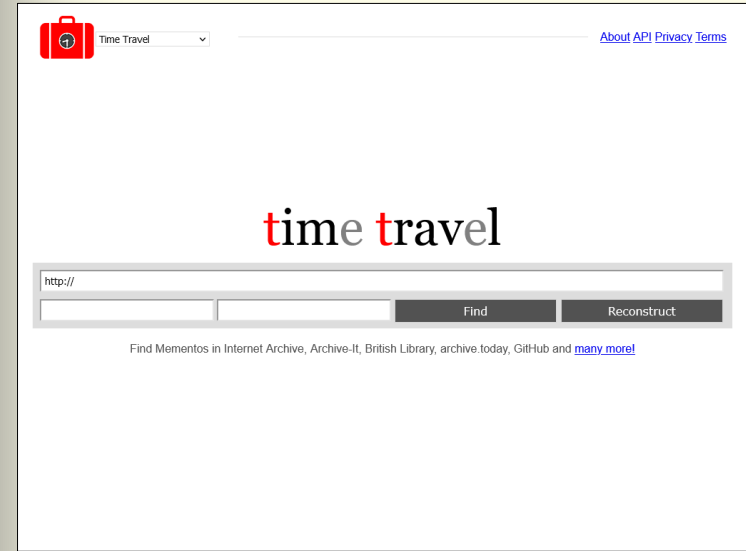


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Other web archives + aggregators

- IA is not the only web archiving org
- also governments + universities, w/ circumscribed scope:
 - national domains
 - topical collections
 - institutional self-archiving
- search across many web archives via the [Time Travel](#) service



Los Alamos National Laboratory: "Time Travel"



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The speaking figure pauses, as if waiting for you. The screen at the front of the room changes. You sense the possibilities open up before you...



What path shall we take?

- [IAWM interface](#)
- [full-text search](#)
- [other IAWM features](#)
- [IAWM in the legal context](#)
- [IAWM temporal dynamics](#)



"You are here:" by Paul Thompson under CC BY-ND 2.0



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What path shall we take?

- IAWM interface
 - calendar + resource pages
 - IAWM banner
 - IAWM web address
- full-text search
 - native full-text search
 - Collections tool + Archive-It full-text search
 - crawl index API + local full-text search
- other IAWM features
 - Changes tool
 - “editing” IAWM contents
- IAWM in the legal context
 - authentication + admissibility
 - patents + IAWM
- IAWM temporal dynamics
 - timestamping content changes
 - temporal (in)coherence

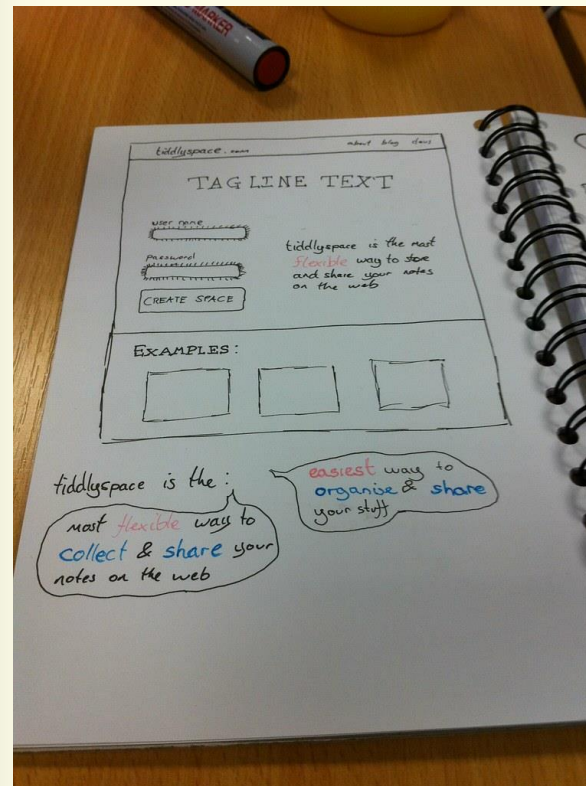


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IAWM interface

- [calendar + resource pages](#)
- [IAWM banner](#)
- [IAWM web address](#)



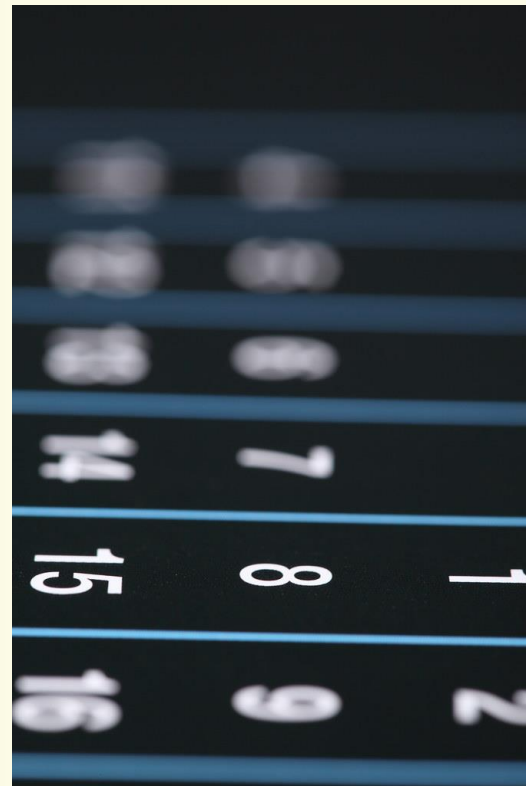
"Simple Mockup" by [Colin Britton](#) under [CC BY 2.0](#)



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Calendar + resource pages



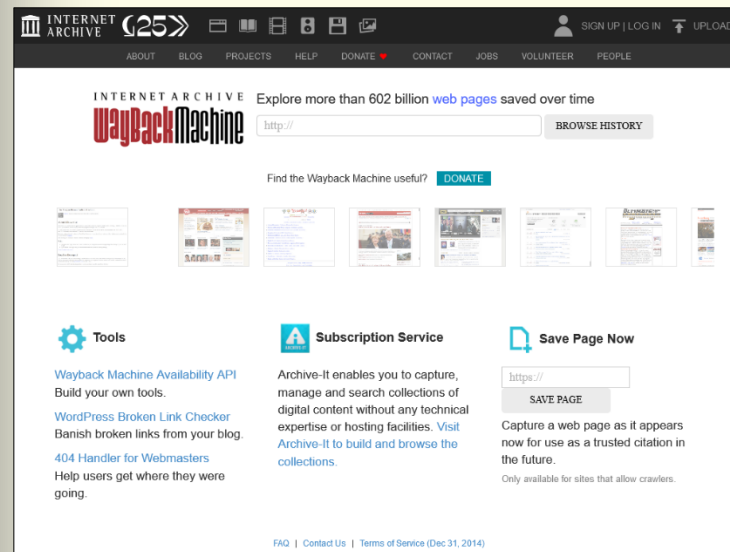
["Calendar"](#) by Droid Gingerbread under [CC BY 2.0](#)



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IAWM home



The screenshot shows the Internet Archive Wayback Machine homepage. At the top, there's a navigation bar with the Internet Archive logo, a '25' anniversary badge, and links for ABOUT, BLOG, PROJECTS, HELP, DONATE, CONTACT, JOBS, VOLUNTEER, and PEOPLE. On the right, there are links for SIGN UP, LOG IN, and UPLOAD. The main content area features the 'INTERNET ARCHIVE' logo and the text 'Explore more than 602 billion web pages saved over time'. Below this is a search bar with 'http://' and a 'BROWSE HISTORY' button. A 'DONATE' button is also present. A section titled 'Find the Wayback Machine useful?' includes a 'DONATE' button and a row of thumbnail images. Further down, there are three columns: 'Tools' with links to 'Wayback Machine Availability API', 'WordPress Broken Link Checker', and '404 Handler for Webmasters'; 'Subscription Service' with a description of Archive-It; and 'Save Page Now' with a 'SAVE PAGE' button and a description of the service. At the bottom, there are links for FAQ, Contact Us, and Terms of Service.

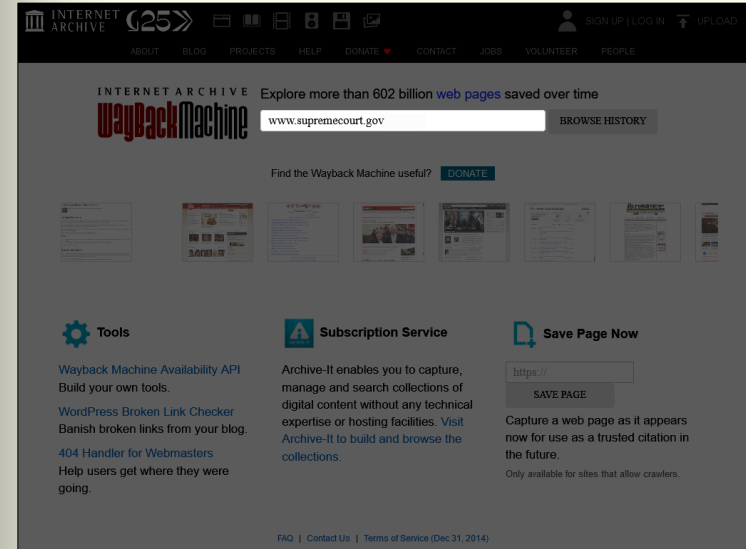
[Internet Archive: "Wayback Machine"](#)



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IAWM home: search box



[Internet Archive: "Wayback Machine"](#)

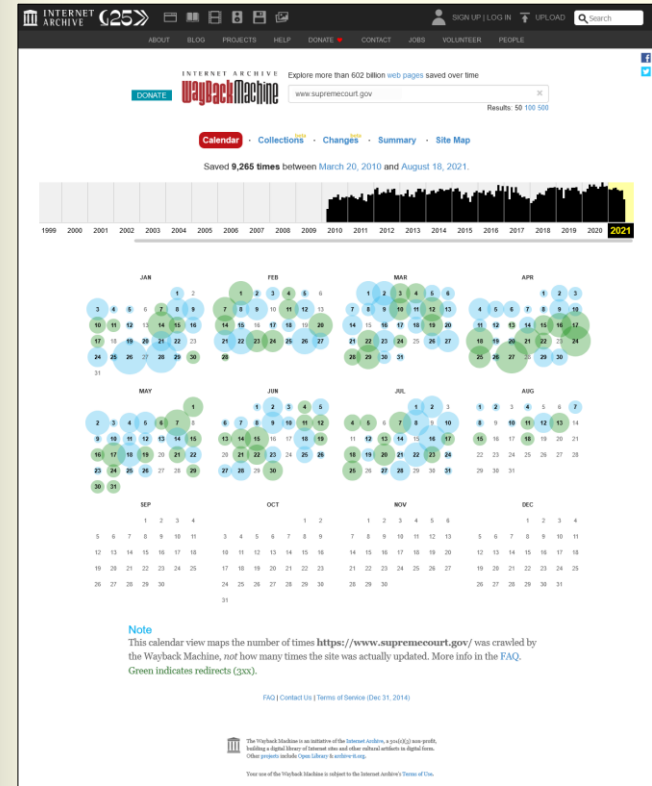


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IAWM calendar page

- landing page presents archival coverage for specified web address for year selected in timeline
- bubble size indicates relative number of captures for that date
- bubble color indicates status code provided by the web server to the IA archiving agent
 - blue means [a successful retrieval](#), with no errors
 - green means [a redirect was encountered](#)



Internet Archive: "Wayback Machine"

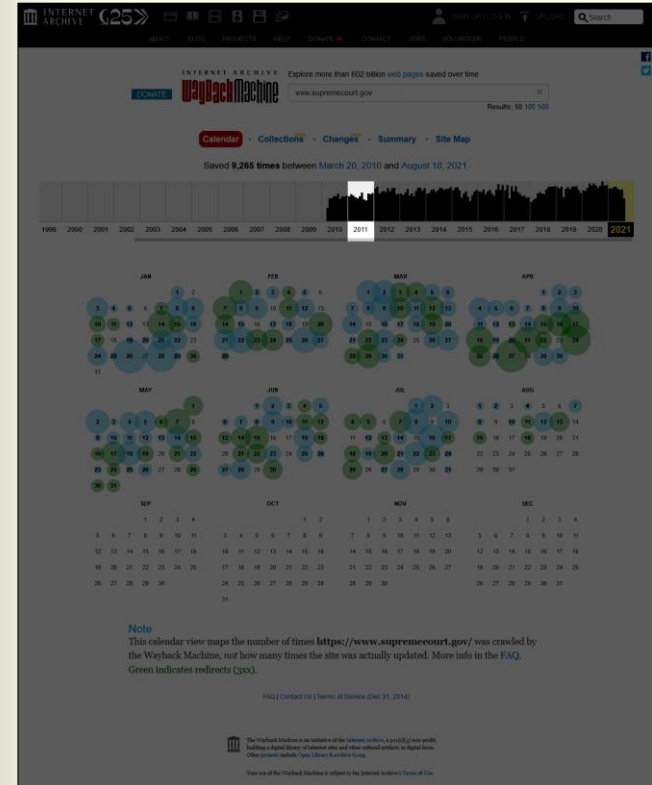


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IAWM calendar page

- click to another year in the timeline to change the calendar view below
- let's click to 2011



[Internet Archive: "Wayback Machine"](#)

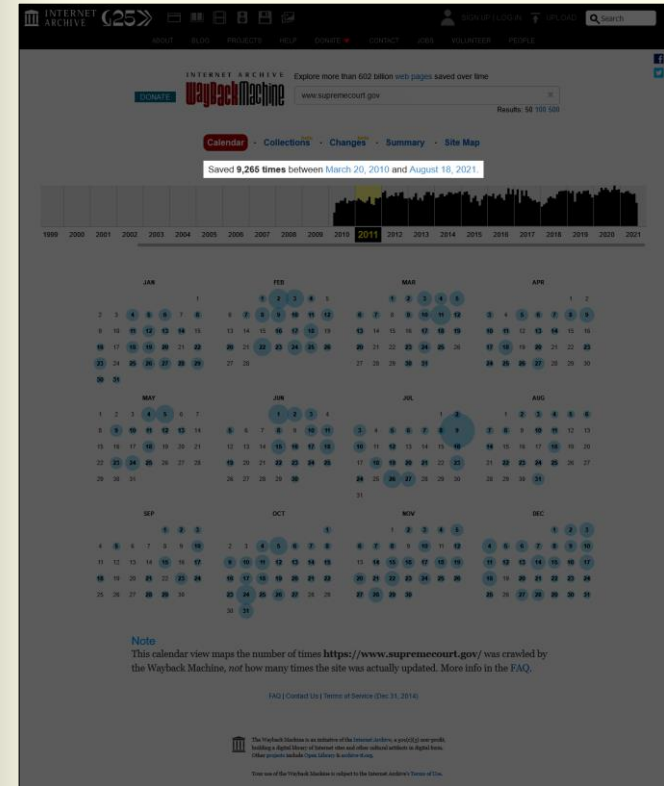


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IAWM calendar page: captures range

- number of captures for the specified web address + their date range is displayed at the top
- links are provided to the first + last captures in the date range



Internet Archive: "Wayback Machine"

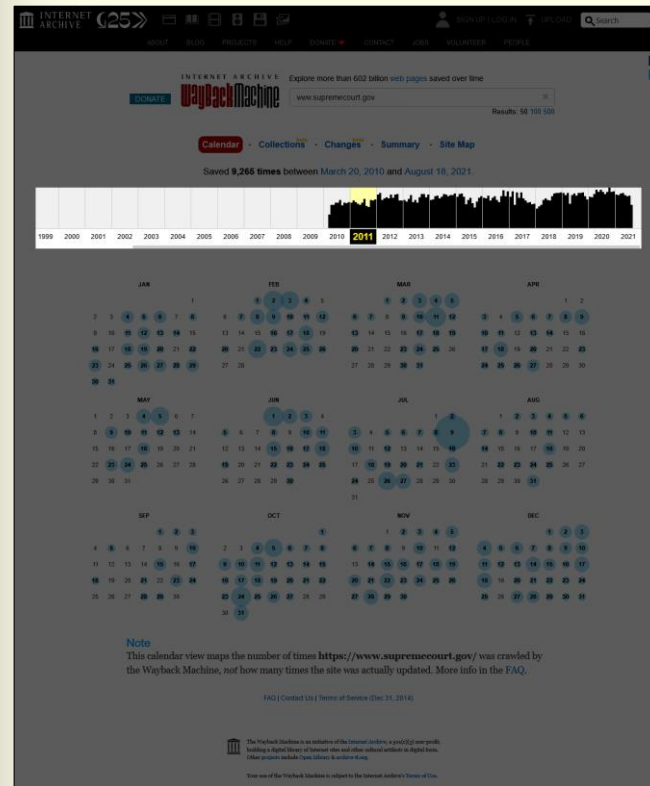


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IAWM calendar page: timeline histogram

- the timeline histogram provides a visual summary of the relative number of captures over time
- each year segment has 12 columns – one for each month
- the year displayed in detail below is highlighted in yellow in the timeline



Internet Archive: "Wayback Machine"



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IAWM calendar page: calendar

- archival coverage for every day of the year selected in the timeline
- this is the 2011 calendar



Internet Archive: "Wayback Machine"

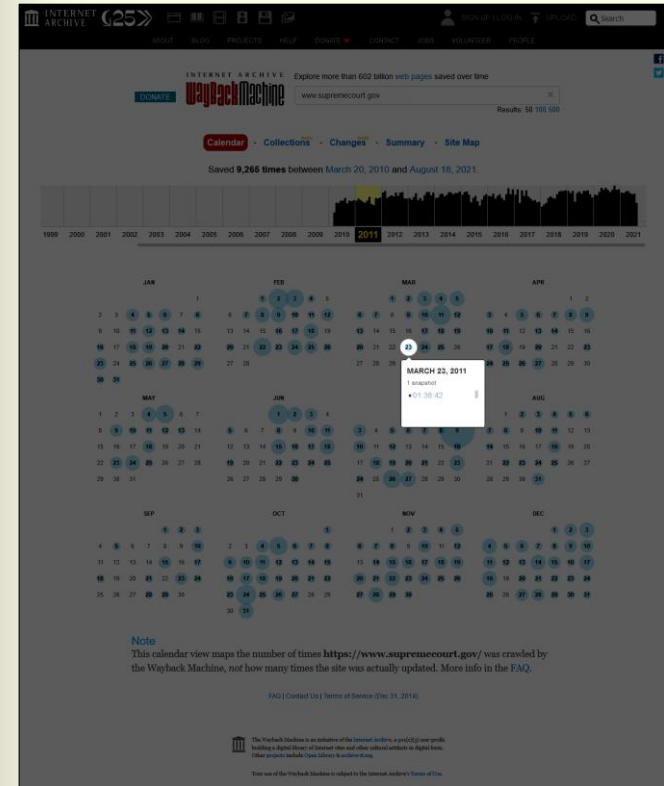


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IAWM calendar page: 23 March 2011 capture

- hovering over a date for which there is at least one capture presents the number of captures + capture time(s)
- clicking on a capture time takes you to the re-representation of the resource captured on that date at that time
- let's click through



Internet Archive: "Wayback Machine"

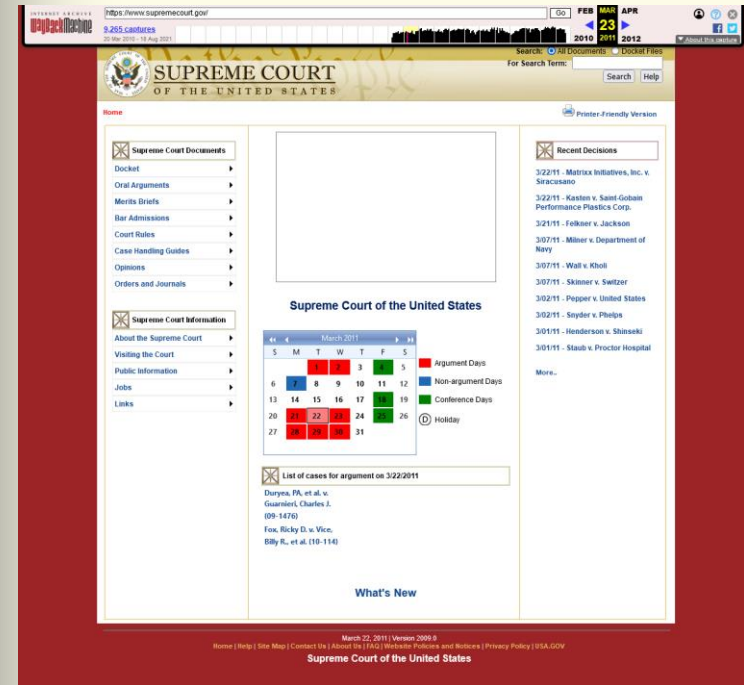


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IAWM resource page

- IAWM resource page for www.supremecourt.gov for the 23 March 2011 capture
- note that archived webpages have a top-justified IAWM overlay banner to:
 - remind the user they're within the IAWM context
 - facilitate navigation
 - provide additional info about the current capture + other captures of the resource located at the same web address
- let's look at the IAWM banner



Internet Archive: "[Wayback Machine](http://www.archive.org/web/20110323000000/http://www.supremecourt.gov)"



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The path forks...

As the story reaches a turning point, the speaking figure again quiets. The screen at the front of the room abruptly changes once more. You feel a sense of déjà vu...



["You are here:"](#) by [Paul Thompson](#) under [CC BY-ND 2.0](#)

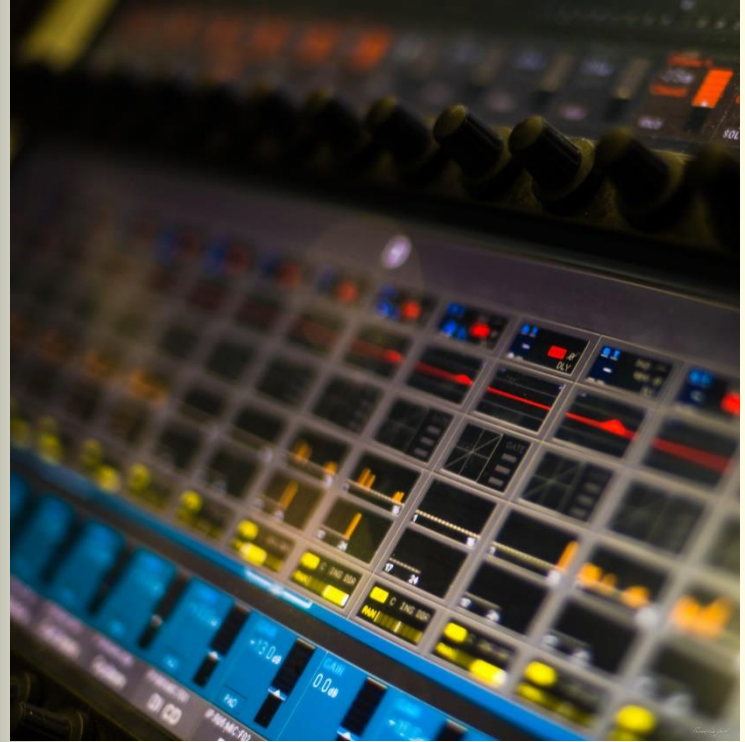
questions



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IAWM banner



"Console de mixage" by [Billy Elliot](#) under [CC0 1.0](#)



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IAWM banner

- IAWM overlay banner for the resource page for the 23 March 2011 capture of www.supremecourt.gov
- let's look at each of the interface elements



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IAWM banner: IAWM logo + home link

- clicking on the IAWM
logo returns you to
[IAWM home](#)



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IAWM banner: search box

- search box displays the web address of the web resource currently accessed in IAWM
- enter keywords to search archived home pages
- enter a web address to navigate to the calendar page showing archival coverage



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IAWM banner: captures range

- total number of captures of the resource currently accessed in IAWM is displayed
- click the link to return to the calendar page, showing archival coverage
- the dates of the first + last captures are displayed below the number of captures



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IAWM banner: timeline histogram

- the timeline histogram displays the relative number of captures over time
- each segment represents a year
- each black bar represents a month
- the red line corresponds to the month of the currently accessed capture



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IAWM banner: timeline histogram

- yellow highlighted date is the capture date of the currently accessed web resource
- to the left and right are temporal navigation links for different intervals – from top to bottom:
 - one month ago / one month ahead
 - last preceding capture / next successive capture
 - one year ago / one year ahead
- for less-frequently captured web resources, intervals may be longer than a month or year



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IAWM banner: sign in, help, hide banner, social media

- 👤 sign in button for IA user account
 - in IAWM context, provides additional features related to [Save Page Now](#)
- ❓ link to help documentation
- ✕ button to hide the toolbar
- 📘 🐦 social media sharing buttons
 - *About this capture* shows datetime offsets of embedded resources (to be reviewed later)



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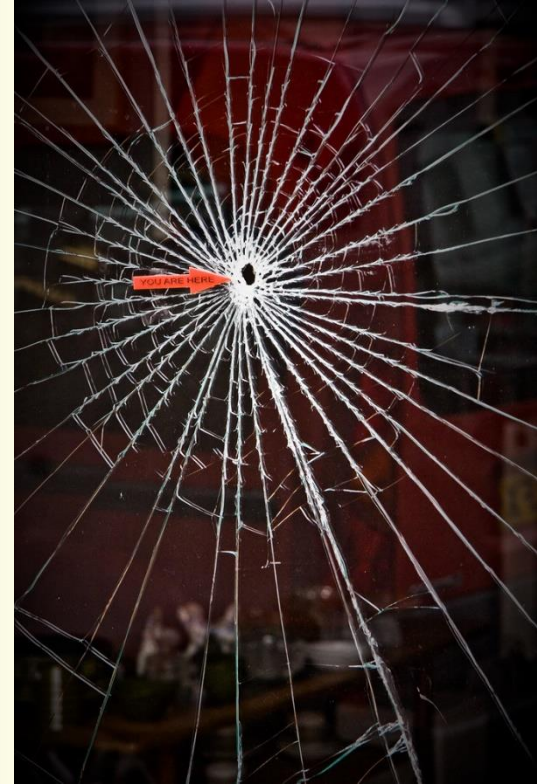
questions



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IAWM web address



["You Are Here"](#) by [Garry Knight](#) under [CC BY 2.0](#)



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IAWM resource page

- let's take a look at the IAWM web address for the first capture for supremecourtus.gov, from 20 May 2000



Internet Archive: "Supreme Court of the United States"



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IAWM web address structure

- **web.archive.org** – base web address of the IAWM software application

web.archive.org/web/20000520031109/supremecourtus.gov/



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IAWM web address structure

web.archive.org/web/20000520031109/supremecourtus.gov/

- **web.archive.org** – base web address of the IAWM software application
- **web** – the web content collection index or context
 - in IAWM, the “web” index includes all publicly accessible archived content, but other orgs’ Wayback access points may be configured differently



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- **web** – the web content collection index or context
 - in IAWM, the “web” index includes all publicly accessible archived content, but other orgs’ Wayback access points may be configured differently
- **20050520031109** – an [ISO 8601](#)-conformant datetime string, in format YYYYMMDDhhmmss (UTC), reflecting the precise date + time of capture of an individual web resource



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IAWM web address structure

web.archive.org/web/20000520031109/supremecourtus.gov/

- **web.archive.org** – base web address of the IAWM software application
- **web** – the web content collection index or context
 - in IAWM, the “web” index includes all publicly accessible archived content, but other orgs’ Wayback access points may be configured differently
- **20050520031109** – an ISO 8601-conformant datetime string, in format YYYYMMDDhhmmss (UTC), reflecting the precise date + time of capture of an individual web resource
- **supremecourtus.gov** – original web address of the archived resource



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The path forks...

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["You are here:"](#) by [Paul Thompson](#) under [CC BY-ND 2.0](#)

questions



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Full-text search

- [native full-text search](#)
- [Collections tool + Archive-It full-text search](#)
- [crawl index API + local full-text search](#)



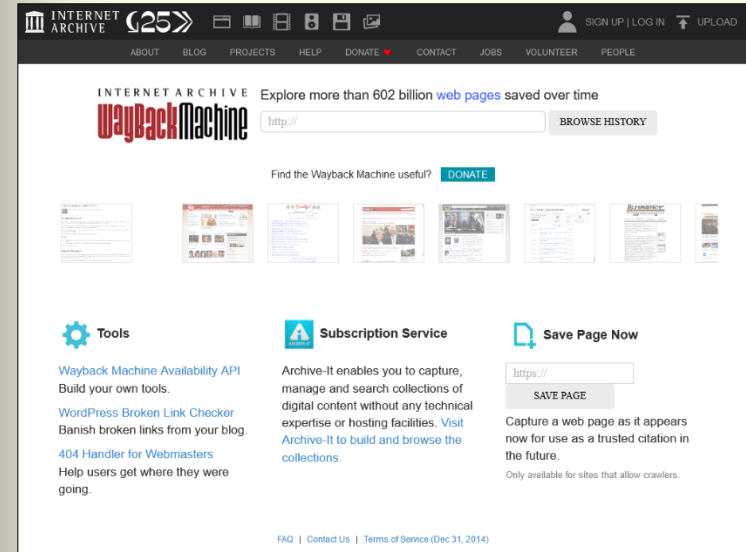
"Letters" by Susanne Nilsson under CC BY-SA 2.0



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Native full-text search



The screenshot shows the Internet Archive Wayback Machine homepage. At the top, there's a navigation bar with links: ABOUT, BLOG, PROJECTS, HELP, DONATE, CONTACT, JOBS, VOLUNTEER, PEOPLE. Below this, the main header features the Internet Archive logo and the text "Explore more than 602 billion web pages saved over time". A search bar is present with the text "http://" and a "BROWSE HISTORY" button. Below the search bar, there's a section titled "Find the Wayback Machine useful?" with a "DONATE" button. A row of small thumbnail images follows. The bottom section is divided into three columns: "Tools" (with links to Wayback Machine Availability API, WordPress Broken Link Checker, 404 Handler for Webmasters), "Subscription Service" (describing Archive-It), and "Save Page Now" (with a "SAVE PAGE" button and a description of the service). The footer contains links for FAQ, Contact Us, and Terms of Service.

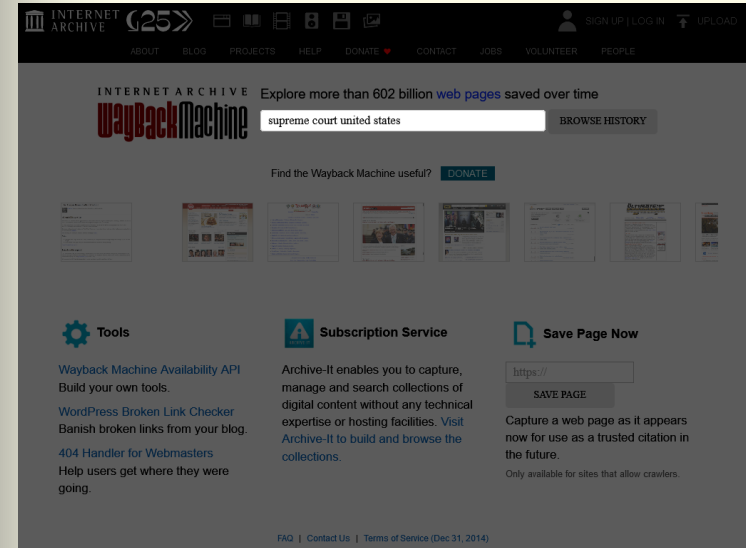
[Internet Archive: "Wayback Machine"](#)



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Native full-text search



[Internet Archive: "Wayback Machine"](#)



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Native full-text search: search results

INTERNET ARCHIVE 25

ABOUT BLOG PROJECTS HELP DONATE CONTACT JOBS VOLUNTEER PEOPLE

Explore more than 603 billion web pages saved over time

supreme court united states

Results: 50 100 500

Experimental search in specific Collections:

<http://supremecourtus.gov/>
supreme court
16,448 110 0 0
115,227 capture(s) from 2000 to 2015 | Site stats

<http://supremecourt.gov/>
u.s. supreme court
12,141 1,632 1,760 5
444,249 capture(s) from 2010 to 2016 | Site stats

<http://scotusblog.com/>
scotusblog
103,093 910 57 2
1,315,924 capture(s) from 2004 to 2016 | Site stats

<http://united-states-supreme-court.skyairline.net/>
united-states-supreme-court.skyairline.net
1 0 0 0
2 capture(s) from 2005 to 2005 | Site stats

<http://scotuswiki.com/>
scotuswiki
1,606 55 0 0
4,328 capture(s) from 2007 to 2016 | Site stats

<http://the-united-states-supreme-court-and-decisions-on-sex.penisencyclopedia.com/>
the united states supreme court and decisions on sex
1 0 0 0
3 capture(s) from 2007 to 2008 | Site stats

<http://uscourts.gov/>
u.s. c
114,791 6.1
Internet Archive: "Wayback Machine"



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Native full-text search: top two results

The screenshot shows the Internet Archive Wayback Machine search interface. The search query is "supreme court united states", and the results are displayed in a list. The top two results are highlighted in white. The first result is for "http://supremecourtus.gov/" with a thumbnail of the Supreme Court building. The second result is for "http://supremecourt.gov/" with a thumbnail of the Supreme Court building. The third result is for "http://scotusblog.com/" with a thumbnail of the Supreme Court building. The fourth result is for "http://united-states-supreme-court.skyairline.net/" with a thumbnail of the Supreme Court building. The fifth result is for "http://scotuswiki.com/" with a thumbnail of the Supreme Court building. The sixth result is for "http://the-united-states-supreme-court-and-decisions-on-sex.penisencyclopedia.com/" with a thumbnail of the Supreme Court building. The seventh result is for "http://uscourts.gov/" with a thumbnail of the Supreme Court building. The search results are sorted by relevance, and the top two results are the most relevant.

URL	Thumbnail	Captures	From	To	Site Stats	
http://supremecourtus.gov/		16,448	110	0	0	115,227 capture(s) from 2000 to 2015 Site stats
http://supremecourt.gov/		12,141	1,632	1,760	5	444,249 capture(s) from 2010 to 2016 Site stats
http://scotusblog.com/		103,093	910	57	2	1,315,924 capture(s) from 2004 to 2016 Site stats
http://united-states-supreme-court.skyairline.net/		1	0	0	0	2 capture(s) from 2005 to 2005 Site stats
http://scotuswiki.com/		1,606	55	0	0	4,928 capture(s) from 2007 to 2016 Site stats
http://the-united-states-supreme-court-and-decisions-on-sex.penisencyclopedia.com/		1	0	0	0	3 capture(s) from 2007 to 2008 Site stats
http://uscourts.gov/		114,791	6	6	6	

Internet Archive: "Wayback Machine"



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Native full-text search: top two results

The screenshot shows the Internet Archive Wayback Machine search interface. The search query is "supreme court united states", and the results are displayed in a list. The top two results are highlighted with red boxes. The first result is for "http://supremecourtus.gov/" with 115,227 captures. The second result is for "http://supremecourt.gov/" with 444,249 captures. Other results include "http://scotusblog.com/", "http://united-states-supreme-court.skyairline.net/", "http://scotuswiki.com/", and "http://the-united-states-supreme-court-and-decisions-on-sex.penisencyclopedia.com/".

URL	Captures	From	To	Site stats
http://supremecourtus.gov/	115,227 capture(s)	2000	2015	Site stats
http://supremecourt.gov/	444,249 capture(s)	2010	2016	Site stats
http://scotusblog.com/	1,315,924 capture(s)	2004	2016	Site stats
http://united-states-supreme-court.skyairline.net/	2 capture(s)	2005	2005	Site stats
http://scotuswiki.com/	4,928 capture(s)	2007	2016	Site stats
http://the-united-states-supreme-court-and-decisions-on-sex.penisencyclopedia.com/	3 capture(s)	2007	2008	Site stats
http://uscourts.gov/	114,791 capture(s)	2000	2016	Site stats



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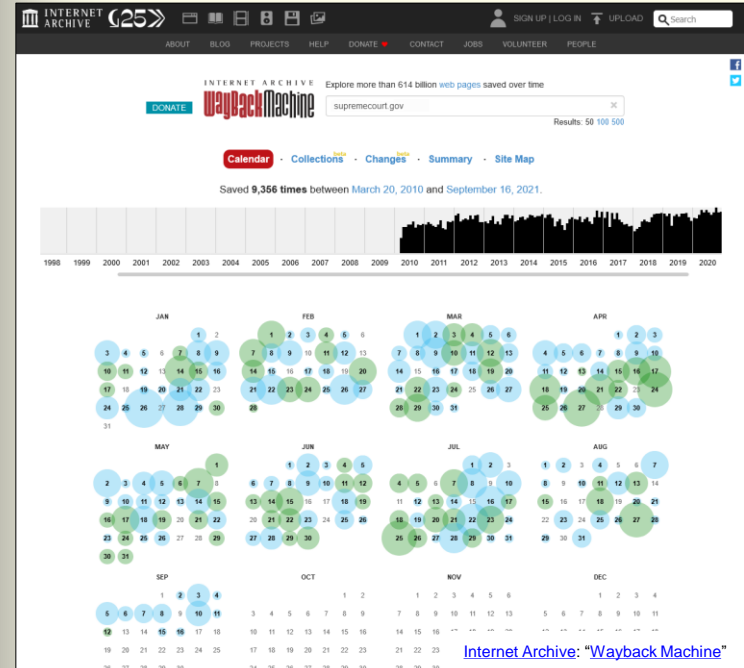
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IAWM calendar pages

supremecourtus.gov



supremecourt.gov



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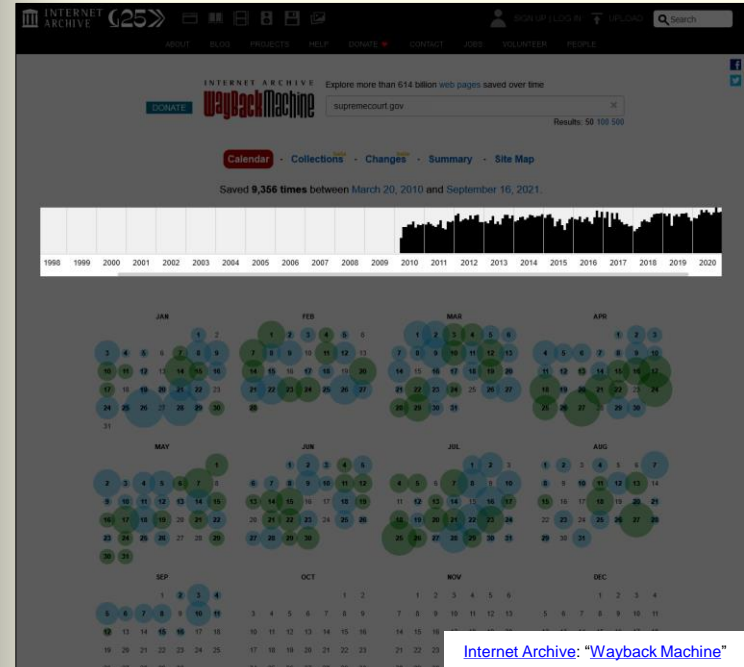
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IAWM calendar pages

supremecourtus.gov



supremecourt.gov



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IAWM resource page

- this is the first capture for supremecourtus.gov, from 20 May 2000



Internet Archive: "Supreme Court of the United States"



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The path forks...

As the story reaches a turning point, the speaking figure again quiets. The screen at the front of the room abruptly changes once more. You feel a sense of déjà vu...



"You are here:" by Paul Thompson under CC BY-ND 2.0

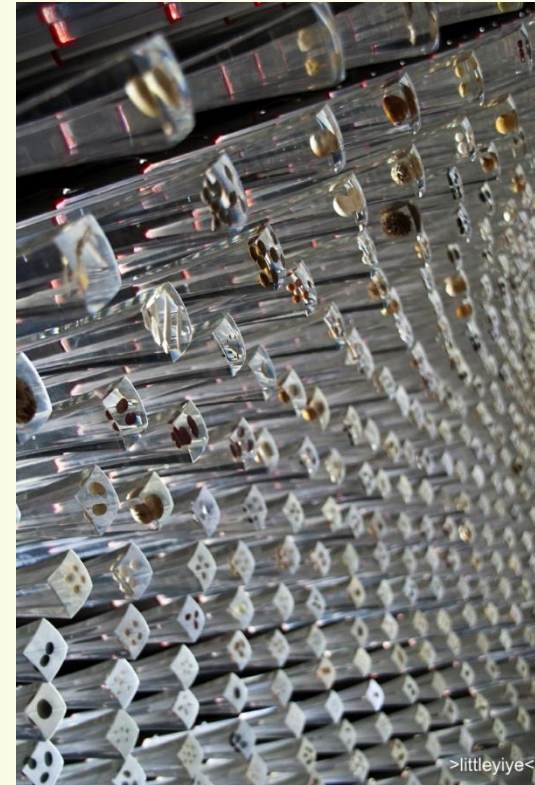
questions



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Collections tool + Archive-It full-text search



"sealed seeds" by [>littleyiye<](#) under [CC BY 2.0](#)



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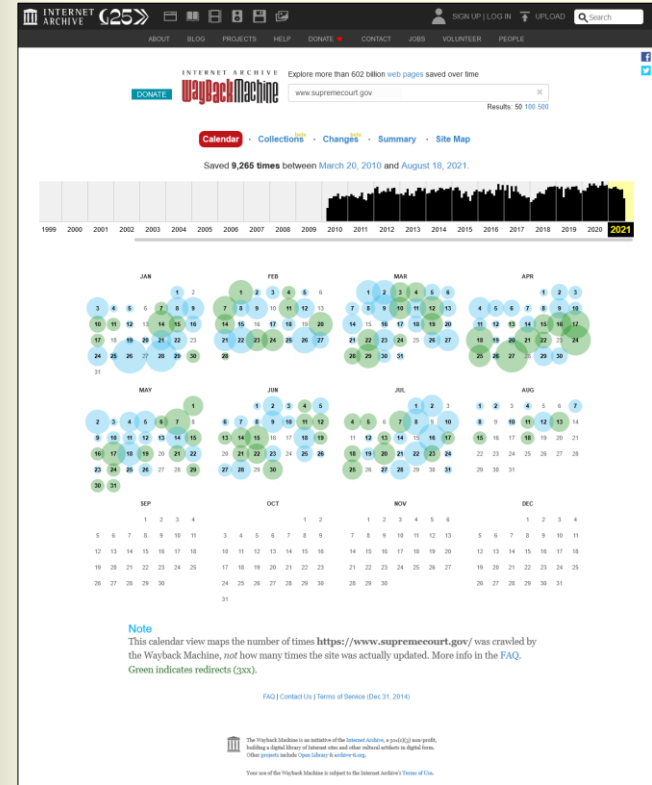
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Collections tool

- IAWM captures have diverse provenance
 - [web-wide crawls](#)
 - [contract crawls](#)
 - [Archive-It crawls](#)
 - [Alexa donations](#)
 - [ArchiveTeam crawls](#)
 - [Save Page Now](#)
- Collections tool shows sources of captures
- why does provenance matter?
 - some sources have more focused crawls, indicating quality
 - some sources offer additional search + discovery options



IAWM calendar page



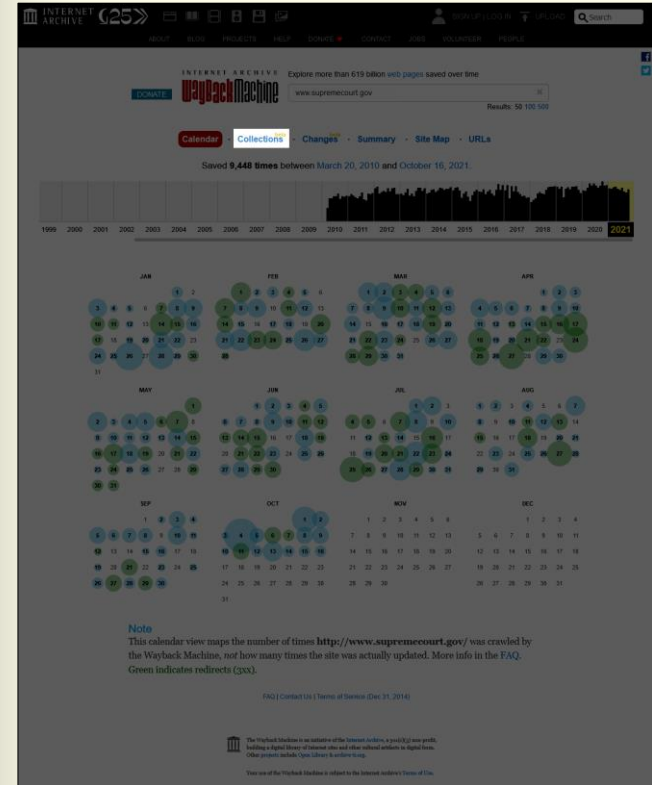
[Internet Archive: "Wayback Machine"](#)



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IAWM calendar page



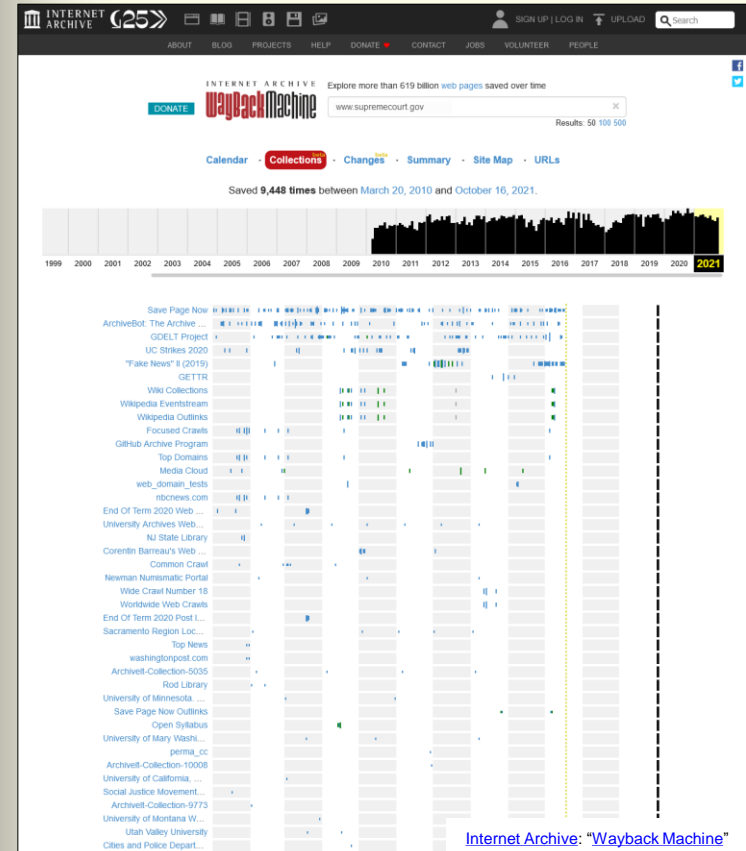
[Internet Archive: "Wayback Machine"](https://www.archive.org/web/)



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Collections tool

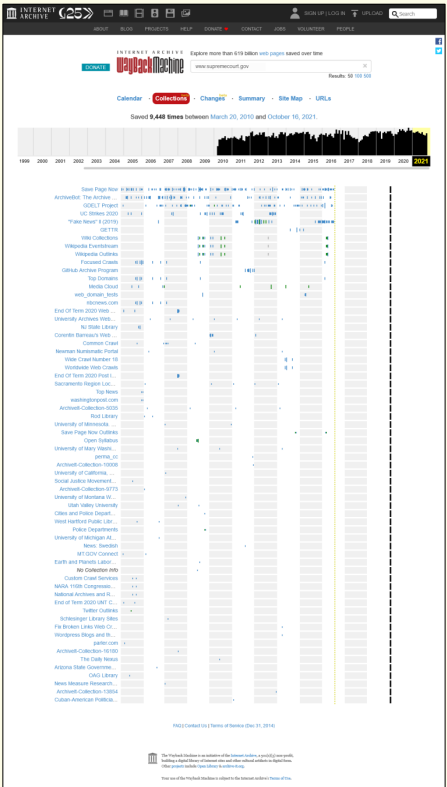


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Collections tool

- hover over individual collection names
- look for string in link target web address: *ArchiveIt-Collection*
- [Archive-It](#) is IA's subscription web archiving service
- used by 100s of orgs to run selective web crawls + curate topical collections
- has [its own discovery portal](#) w/ [full-text search](#)



Internet Archive: "Wayback Machine"



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Archive-It full-text search

The screenshot shows the Archive-It website's search interface. At the top, there is a navigation bar with links for HOME, EXPLORE, LEARN MORE, and CONTACT US. The Archive-It logo is on the left, and social media icons for Facebook, Twitter, and LinkedIn are on the right. A 'Login' button is also present. Below the navigation bar, the main heading is 'Explore All Archives'. A search bar is located on the right side of the main content area, with a 'Search' button and a 'Clear' button. To the left of the search bar, there is a section for 'Advanced Search' with several input fields: 'Contains all of:', 'Exact phrase:', 'Not containing:', 'From the Host:', 'Results per host:', 'File format:', 'Capture date range:', and 'To:'. Below these fields are buttons for 'Advanced Search' and 'Help with Search'. The main content area is a large, empty box with the text 'Please enter terms above to search for archived content.'

Archive-It: "Explore Archived Content"



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Archive-It full-text search

The screenshot shows the Archive-It website's search interface. At the top, there's a navigation bar with links for HOME, EXPLORE, LEARN MORE, and CONTACT US. The main heading is 'Explore All Archives'. Below this, there's a search bar with the placeholder text 'Enter search terms here' and a 'Search' button. To the left of the search bar, there's a section for 'Advanced Search' with several filters: 'Contains all of:' (with a text input), 'Exact phrase:' (with a text input containing 'press release'), 'Not containing:' (with a text input), 'From the Host:' (with a text input containing 'www.supremecourt.gov'), 'Results per host:' (a dropdown menu set to 'Unlimited'), 'File format:' (a dropdown menu set to 'All formats'), and 'Capture date range:' (with 'From' and 'To' dropdown menus). Below these filters is an 'Advanced Search' button and a link to 'Help with Search'. On the right side of the search bar, there are tabs for 'Collecting Organizations', 'Collections', 'Sites', and 'Search Page Text'. Below the search bar, there's a large text area with the placeholder text 'Please enter terms above to search for archived content.' The footer of the page contains the Archive-It logo, the text 'Archive-It Built at the Internet Archive', and a brief description of the service. There are also links for 'Home', 'Learn More', and 'Contact Us'.


Archive-It: "Explore Archived Content"




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Archive-It full-text search

HOMEEXPLORELEARN MORECONTACT US

The leading web archiving service
for collecting and accessing
cultural heritage on the web
Built at the Internet Archive



Explore All Archives

Enter a search term on the right to search the text within the archived pages. Or for more search options, use the Advanced Search options below.

Enter search terms here Search Filter

Advanced Search

Contains all of:

Exact phrase

Not containing:

From the Host:

Results per host:

File format:

Capture date range:
From: To:

Advanced Search

Help with Search

Page 1 of 12 (231 Total Results) Next Page

Sort By: Best Match

Home - Supreme Court of the United States
Collection: California Political Blogs By University of California Libraries
URL: <http://www.supremecourt.gov/>
This text was captured on Apr 21, 2013 [Show All Captures](#)
Press release regarding the DOMA and Prop 8 arguments audio and transcript release
Content: application/xhtml+xml Size: 78 KB

Press Release 04/29/13
Collection: Georgetown Law Center By Georgetown Law Library
URL: <http://www.supremecourt.gov/ctrules/2013revisedrules.pdf>
This text was captured on May 02, 2013 [Show All Captures](#)
FOR IMMEDIATE RELEASE For Further Information Contact: April 29, 2013 Kathy Arberg at (202) 479-3211 The Supreme Court of the United States has adopted a revised version of the Rules of the Court.
Content: application/pdf Size: 145 KB

Home - Supreme Court of the United States
Collection: California Political Blogs By University of California Libraries
URL: <http://www.supremecourt.gov/default.aspx>
This text was captured on Mar 22, 2013 [Show All Captures](#)
Pelley, Robert (12-52) What's New **Press release** regarding the DOMA and Prop 8 arguments audio and transcript release
Content: application/xhtml+xml Size: 82 KB

Press Releases - 10/25/04 - Supreme Court of the United States
Collection: 2013 Supreme Court Hearings on DOMA/Prop 8 By Internet Archive Global Events
URL: http://www.supremecourt.gov/publicinfo/press/viewpressreleases.aspx?FileName=pr_10-25-04.html
This text was captured on Apr 14, 2013 [Show All Captures](#)
Untitled Document For Immediate Release For Further Information Contact: October 25, 2004 Kathleen L. Arberg Phone: (202) 479-3211 **Press Release** Regarding Chief Justice William H.
Content: application/xhtml+xml Size: 49 KB

The Supreme Court Fellows Program - Press Release - Stephanie Tai - Supreme Court of the United State

Archive-It: "<https://archive-it.org/explore/?show=ArchivedPages...>"



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The path forks...

As the story reaches a turning point, the speaking figure again quiets. The screen at the front of the room abruptly changes once more. You feel a sense of déjà vu...



"You are here:" by Paul Thompson under CC BY-ND 2.0

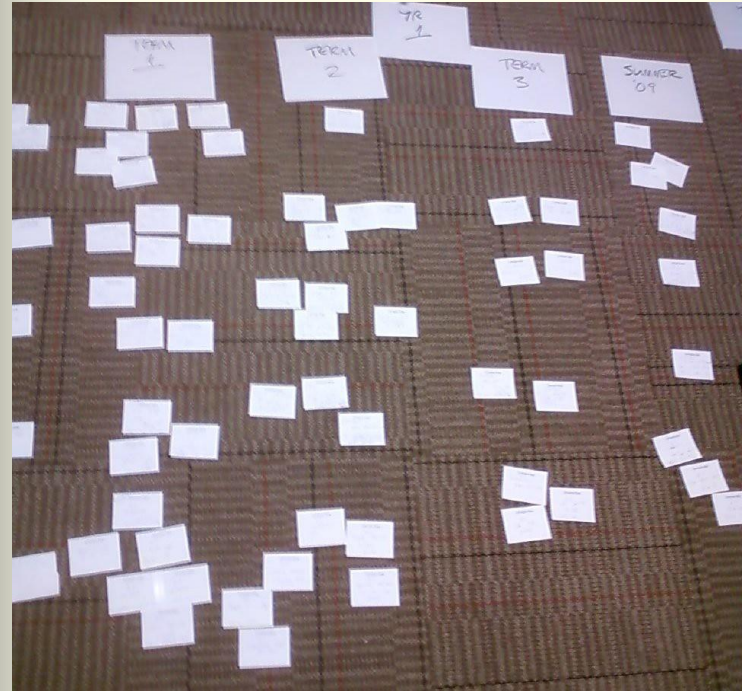
questions



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Crawl index API + local full-text search



"External Memory - Analog saved me" by Christmas w/a K under CC BY-SA 2.0



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IAWM resource page

- let's pick up again w/ the 20 May 2000 capture of supremecourtus.gov



Internet Archive: "Supreme Court of the United States"



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IAWM resource page

- let's look at the web address path for the *Opinions* section of the website



Internet Archive: "Supreme Court of the United States"



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IAWM resource page



www.supremecourtus.gov/opinions/opinions.html

Internet Archive: "Supreme Court of the United States"



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Retrieving a selective IAWM index of archived resources

web.archive.org/web/*/www.supremecourtus.gov/opinions/*








- “*” character functions as a wildcard operator (i.e., *match any*)
- wildcard in place of the datetime string tells IAWM, *for any capture date*
- wildcard suffix to the original web address path tells IAWM, *for any archived resource below this path*
- combined, this asks IAWM to show all archived web resources in its index, for any date, below the path:
www.supremecourtus.gov/opinions/



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Retrieving a selective IAWM index of archived resources

INTERNET ARCHIVE **25**       

ABOUT BLOG PROJECTS HELP DONATE CONTACT JOBS VOLUNTEER PEOPLE

INTERNET ARCHIVE **Wayback Machine** www.supremecourtus.gov/opinions/ [Go Wayback!](#)

1,372 URLs have been captured for this domain.

Filter results (i.e. 'text'):

URL	MIME TYPE	FROM	TO	CAPTURES	DUPLICATES	UNIQUE
http://supremecourtus.gov/opinions/05pdf/04-1477.pdf	application/pdf	May 9, 2006	Mar 30, 2021	25	20	5
http://supremecourtus.gov/opinions/05pdf/05-18.pdf	application/pdf	Jul 25, 2006	Feb 13, 2021	44	40	4
http://supremecourtus.gov/opinions/05pdf/05-352.pdf	application/pdf	Jul 25, 2006	Feb 11, 2021	33	28	5
http://supremecourtus.gov/opinions/05pdf/05-416.pdf	application/pdf	Jul 25, 2006	Apr 7, 2019	23	18	5
http://supremecourtus.gov/opinions/06pdf/05-1126.pdf	application/pdf	Jun 25, 2007	Mar 14, 2021	64	59	5
http://supremecourtus.gov/opinions/06pdf/05-1272.pdf	application/pdf	Oct 11, 2007	Mar 14, 2021	35	30	5
http://supremecourtus.gov/opinions/06pdf/05-1575.pdf	application/pdf	Jul 9, 2007	Oct 23, 2020	35	31	4
http://supremecourtus.gov/opinions/06pdf/06-116.pdf	application/pdf	Apr 26, 2008	Dec 22, 2016	9	4	5
http://supremecourtus.gov/opinions/06pdf/06-134.pdf	application/pdf	Jul 9, 2007	Nov 5, 2017	34	30	4
http://supremecourtus.gov/opinions/06pdf/06-313.pdf	application/pdf	Oct 11, 2007	Apr 11, 2021	10	6	4
http://supremecourtus.gov/opinions/07pdf/06-1195.pdf	application/pdf	Jun 12, 2008	Sep 8, 2021	286	281	5
http://supremecourtus.gov/opinions/07pdf/06-1457.pdf	application/pdf	Sep 16, 2008	Jan 26, 2021	36	32	4
http://supremecourtus.gov/opinions/07pdf/06-1646.pdf	application/pdf	Sep 16, 2008	Mar 9, 2021	37	33	4
http://supremecourtus.gov/opinions/07pdf/06-1717.pdf	application/pdf	Sep 16, 2008	Apr 11, 2021	83	79	4
http://supremecourtus.gov/opinions/07pdf/06-766.pdf	application/pdf	Mar 6, 2008	Mar 14, 2021	38	35	3
http://supremecourtus.gov/opinions/07pdf/06-984.pdf	application/pdf	Apr 8, 2008	Apr 27, 2021	142	138	4
http://supremecourtus.gov/opinions/07pdf/06-984a.pdf	application/pdf	Sep 16, 2008	Apr 7, 2019	10	8	2
http://supremecourtus.gov/opinions/07pdf/07-21.pdf	application/pdf	May 10, 2008	Mar 23, 2021	76	72	4
http://supremecourtus.gov/opinions/07pdf/07-210.pdf	application/pdf	Sep 16, 2008	Apr 10, 2021	33	9	4
http://supremecourtus.gov/opinions/07pdf/07-312.pdf	application/pdf	Sep 16, 2008	Apr 11, 2021	32	8	4
http://supremecourtus.gov/opinions/07pdf/07-320.pdf	application/pdf	Sep 16, 2008	Nov 27, 2020	39	34	5
http://supremecourtus.gov/opinions/07pdf/07-371.pdf	application/pdf	Sep 16, 2008	Apr 11, 2021	74	70	4
http://supremecourtus.gov/opinions/07pdf/07-411.pdf	application/pdf	Sep 16, 2008	May 7, 2021	34	31	3
http://supremecourtus.gov/opinions/07pdf/07-455.pdf	application/pdf	Sep 5, 2008	Apr 10, 2021	35	31	4
http://supremecourtus.gov/opinions/07pdf/07-552.pdf	application/pdf	Sep 16, 2008	Feb 16, 2021	25	21	4
http://supremecourtus.gov/opinions/07pdf/07-6053.pdf	application/pdf	Sep 16, 2008	Apr 1, 2021	35	31	4
http://supremecourtus.gov/opinions/07pdf/07-818.pdf	application/pdf	Sep 17, 2008	Nov 5, 2017	10	8	2
http://supremecourtus.gov/opinions/07pdf/07-9267.pdf	application/pdf	Sep 17, 2008	Nov 5, 2017	9	7	2
http://supremecourtus.gov/opinions/08in-chambers.html	text/html	Sep 16, 2008	Aug 14, 2009	16	14	2
http://supremecourtus.gov/opinions/08pdf/07-10374.pdf	application/pdf	Aug 26, 2009	Mar 9, 2021	5	3	2
http://supremecourtus.gov/opinions/08pdf/07-1090.pdf	application/pdf	Aug 26, 2009				
http://supremecourtus.gov/opinions/08pdf/07-6306.pdf	application/pdf	Aug 14, 2009				

[Internet Archive: "Wayback Machine"](#)



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Filter by string (“slip”) found in web address

INTERNET ARCHIVE **Wayback Machine** www.supremecourt.gov/opinions/ [Go Wayback!](#)

1,372 URLs have been captured for this domain.

Filter results (i.e. "txt"):

URL	NAME	TYPE	FROM	TO	CAPTURES	DUPLICATES	IMAGES
http://supremecourt.gov/opinions/slipdts/s553p2.html	lec	html	Sep 17, 2008	Feb 15, 2019	9	7	2
http://supremecourt.gov/opinions/slipdts/s554p1.html	lec	html	Sep 17, 2008	Oct 23, 2009	9	8	1
http://supremecourt.gov/opinions/slipdts/s554p2.html	lec	html	Sep 17, 2008	Oct 23, 2009	10	9	1
http://supremecourt.gov/opinions/slipdts/s555p2.html	lec	html	Oct 23, 2009	Oct 23, 2009	1	0	1
http://supremecourt.gov/opinions/slipdts/s556p1.html	lec	html	May 11, 2009	Jan 28, 2010	4	3	1
http://supremecourt.gov/opinions/slipdts/s556p2.html	lec	html	Oct 23, 2009	Jan 28, 2010	1	2	1
http://supremecourt.gov/opinions/slipdts/s557p1.html	lec	html	Oct 23, 2009	Jan 28, 2010	3	2	1
http://supremecourt.gov/80/opinions/03slpopin.html	lec	html	Dec 4, 2003	Apr 27, 2021	233	236	17
http://supremecourt.gov/80/opinions/slipdts/s539p2.html	lec	html	Jun 28, 2003	Sep 23, 2006	16	12	4
http://supremecourt.gov/80/opinions/slipdts/s541p1.html	lec	html	Apr 17, 2004	Aug 6, 2007	15	11	4
http://supremecourt.gov/80/opinions/slipdts/s558p1.html	lec	html	Jan 27, 2010	Jan 28, 2010	2	1	1
http://www.supremecourt.gov/opinions/00slpopin.html	url		Feb 11, 2021	Feb 11, 2021	1	0	1
http://www.supremecourt.gov/opinions/00slpopin.html	url		Jun 18, 2021	Jun 18, 2021	1	0	1
http://www.supremecourt.gov/opinions/00slpopin.html	url		May 5, 2021	May 7, 2021	3	2	1
http://www.supremecourt.gov/opinions/01slpopin.html	url		Apr 11, 2021	Apr 11, 2021	1	0	1
http://www.supremecourt.gov/opinions/03slpopin.html	url		Jan 25, 2021	Jan 25, 2021	1	0	1
http://www.supremecourt.gov/opinions/03slpopin.html%E2%80%99	url		Mar 8, 2021	Mar 8, 2021	2	1	1
http://www.supremecourt.gov/opinions/04slpopin.html	url		Mar 14, 2021	Mar 14, 2021	1	0	1
http://www.supremecourt.gov/opinions/04slpopin.html	url		Mar 9, 2021	Mar 9, 2021	1	0	1
http://www.supremecourt.gov/opinions/04slpopin.html	url		Apr 11, 2021	Apr 11, 2021	1	0	1
http://www.supremecourt.gov/opinions/04slpopin.html-20	url		Apr 11, 2021	Apr 11, 2021	1	0	1
http://www.supremecourt.gov/opinions/04slpopin.html	url		Jan 25, 2021	Jan 25, 2021	1	0	1
http://www.supremecourt.gov/opinions/04slpopin.html_-20	url		Feb 27, 2021	Feb 27, 2021	1	0	1
http://www.supremecourt.gov/opinions/05slpops	url		Jun 8, 2021	Jun 8, 2021	2	1	1
http://www.supremecourt.gov/opinions/05slpopin.html	url		Jun 9, 2021	Jun 9, 2021	1	0	1
http://www.supremecourt.gov/opinions/05slpopin.html-20	url		May 5, 2021	May 5, 2021	2	1	1
http://www.supremecourt.gov/opinions/06slpopin.html	url		Feb 13, 2021	Feb 13, 2021	1	0	1
http://www.supremecourt.gov/opinions/07slpopin.html	url		Feb 27, 2021	Feb 27, 2021	2	1	1
http://www.supremecourt.gov/opinions/08slpopin.html	lec	html	Sep 16, 2008	Apr 27, 2021	73	17	16
http://www.supremecourt.gov/opinions/09slpopin.html	url		Apr 22, 2019				
http://www.supremecourt.gov/opinions/09slpopin.html	url		Sep 17, 2012				

Internet Archive: "Wayback Machine"



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Filter by string (“slip”) found in web address

INTERNET ARCHIVE **Wayback Machine** [DONATE](#) [Go Wayback!](#)

1,372 URLs have been captured for this domain.

Filter results (i.e. 'txt'):

URL	DATE	TYPE	FROM	TO	CAPTURES	DUPLICATES	UNIQUES
http://supremecourtus.gov/opinions/sliplists/s553p2.html	Sep 17, 2008	text/html	Feb 15, 2019		9	7	2
http://supremecourtus.gov/opinions/sliplists/s554p11.html	Sep 17, 2008	text/html	Oct 23, 2009		9	8	1
http://supremecourtus.gov/opinions/sliplists/s554p2.html	Sep 17, 2008	text/html	Oct 23, 2009		10	9	1
http://supremecourtus.gov/opinions/sliplists/s555p2.html	Oct 23, 2009	text/html	Oct 23, 2009		1	0	1
http://supremecourtus.gov/opinions/sliplists/s556p11.html	May 11, 2009	text/html	Jan 28, 2010		4	3	1
http://supremecourtus.gov/opinions/sliplists/s556p2.html	Oct 23, 2009	text/html	Jan 28, 2010		1	2	1
http://supremecourtus.gov/opinions/sliplists/s557p11.html	Oct 23, 2009	text/html	Jan 28, 2010		3	2	1
http://supremecourtus.gov/80/opinions/03slipopinion.html	Dec 4, 2003	text/html	Apr 27, 2021		233	236	17
http://supremecourtus.gov/80/opinions/sliplists/s539p2.html	Jun 28, 2003	text/html	Sep 23, 2006		16	12	4
http://supremecourtus.gov/80/opinions/sliplists/s541p11.html	Apr 17, 2004	text/html	Aug 6, 2007		15	11	4
http://supremecourtus.gov/80/opinions/sliplists/s558p11.html	Jan 27, 2010	text/html	Jan 28, 2010		2	1	1
http://www.supremecourtus.gov/opinions/00slipopinion.html	Feb 11, 2021	unk	Feb 11, 2021		1	0	1
http://www.supremecourtus.gov/opinions/00slipopinion.html	Jun 10, 2021	unk	Jun 10, 2021		1	0	1
http://www.supremecourtus.gov/opinions/00slipopinion.html	May 5, 2021	unk	May 7, 2021		3	2	1
http://www.supremecourtus.gov/opinions/01slipopinion.html	Apr 11, 2021	unk	Apr 11, 2021		1	0	1
http://www.supremecourtus.gov/opinions/03slipopinion.html	Jan 25, 2021	unk	Jan 25, 2021		1	0	1
http://www.supremecourtus.gov/opinions/03slipopinion.html%E2%80%99	Mar 8, 2021	unk	Mar 8, 2021		2	1	1
http://www.supremecourtus.gov/opinions/04slipopinion.html	Mar 14, 2021	unk	Mar 14, 2021		1	0	1
http://www.supremecourtus.gov/opinions/04slipopinion.html	Mar 9, 2021	unk	Mar 9, 2021		1	0	1
http://www.supremecourtus.gov/opinions/04slipopinion.html	Apr 11, 2021	unk	Apr 11, 2021		1	0	1
http://www.supremecourtus.gov/opinions/04slipopinion.html-20	Apr 11, 2021	unk	Apr 11, 2021		1	0	1
http://www.supremecourtus.gov/opinions/04slipopinion.html_	Jan 25, 2021	unk	Jan 25, 2021		1	0	1
http://www.supremecourtus.gov/opinions/04slipopinion.html_-20	Feb 27, 2021	unk	Feb 27, 2021		1	0	1
http://www.supremecourtus.gov/opinions/05slipopi	Jun 8, 2021	unk	Jun 8, 2021		2	1	1
http://www.supremecourtus.gov/opinions/05slipopinion.html	Jun 9, 2021	unk	Jun 9, 2021		1	0	1
http://www.supremecourtus.gov/opinions/05slipopinion.html-20	May 5, 2021	unk	May 5, 2021		2	1	1
http://www.supremecourtus.gov/opinions/06slipopinion.html	Feb 13, 2021	unk	Feb 13, 2021		1	0	1
http://www.supremecourtus.gov/opinions/07slipopinion.html_	Feb 27, 2021	unk	Feb 27, 2021		2	1	1
http://www.supremecourtus.gov/opinions/08slipopinion.html	Sep 16, 2008	text/html	Apr 27, 2021		73	17	16
http://www.supremecourtus.gov/opinions/09slipopinion.html	Apr 22, 2019	unk					
http://www.supremecourtus.gov/opinions/09slipopinion.html	Sep 17, 2012	unk					

[Internet Archive: "Wayback Machine"](#)



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Machine-readable indexes via Wayback CDX Server API

- CDX = **C**rawl in**D**e**X**
- metadata about IAWM contents
- structured data, for machine processing
- filter + retrieve with specially-formatted web address, described in [API documentation](#)
- output can be reformatted into a download manifest for bulk retrieval (e.g., using [wget](#))
- full text of downloaded webpages can be searched locally (e.g., using [DocFetcher](#))



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Machine-readable indexes via Wayback CDX Server API

[illegible]

Internet Archive: "<https://web.archive.org/cdx/search/cdx?url=supremecourtus.gov/opinions/opinions.html>"



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The path forks...

As the story reaches a turning point, the speaking figure again quiets. The screen at the front of the room abruptly changes once more. You feel a sense of déjà vu...



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questions



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Other IAWM features

- [Changes tool](#)
- [“editing” IAWM contents](#)



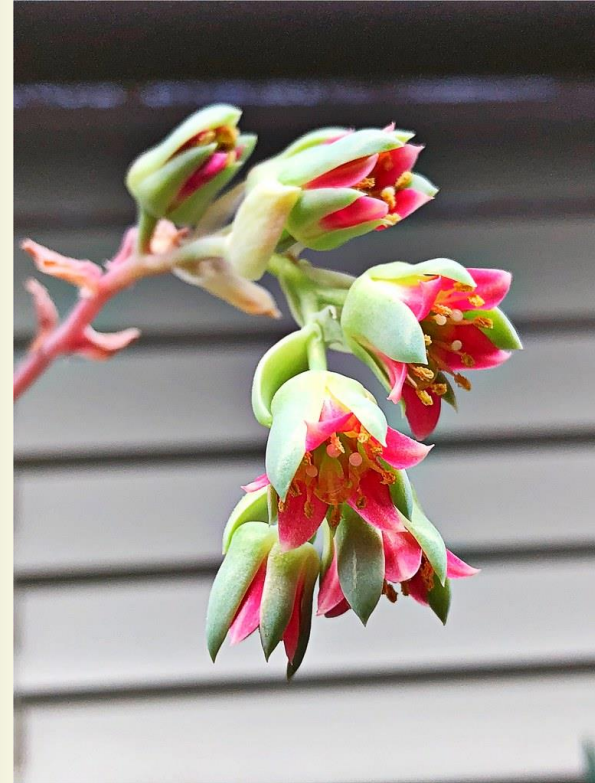
[“ancillary dreams”](#) by [mandam](#) under [CC BY 2.0](#)



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Changes tool



"Getting my succulents and cacti on the path to being outdoors this summer. Pachyphytum in bloom." by Ron Frazier under [CC BY 2.0](#)



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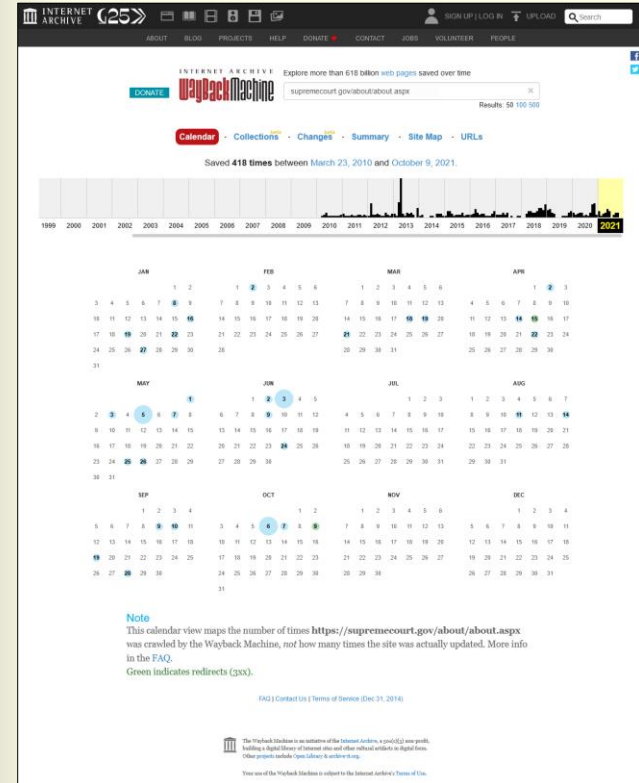
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Changes tool

- flags differences in text b/t 2 captures of same web page
- caveats:
 - doesn't consider non-textual elements
 - doesn't account for intermediate changes
 - changes may not matter for legal issue
- use to:
 - identify when a web page changed
 - quickly visualize the text changes over time
 - establish when web page text was substantially identical



IAWM calendar page



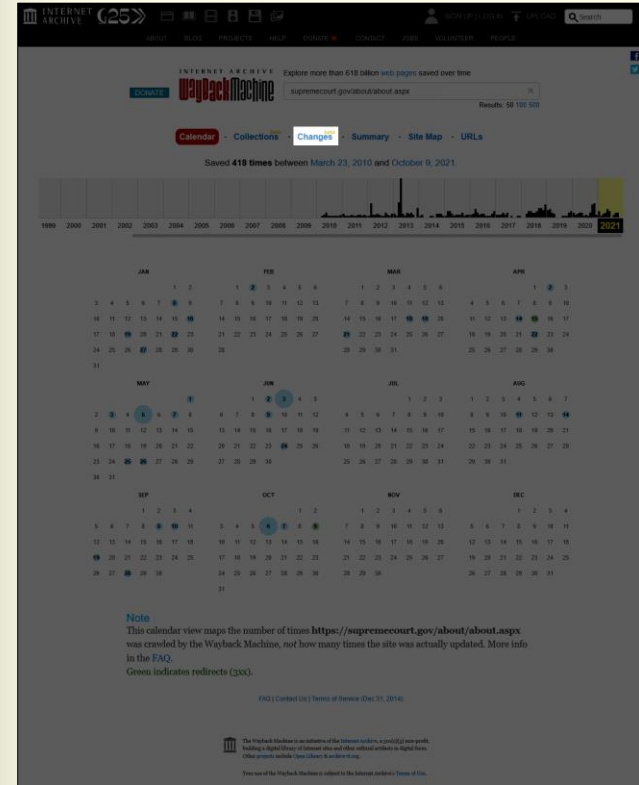
Internet Archive: "Wayback Machine"



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IAWM calendar page



Internet Archive: "Wayback Machine"



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Changes tool

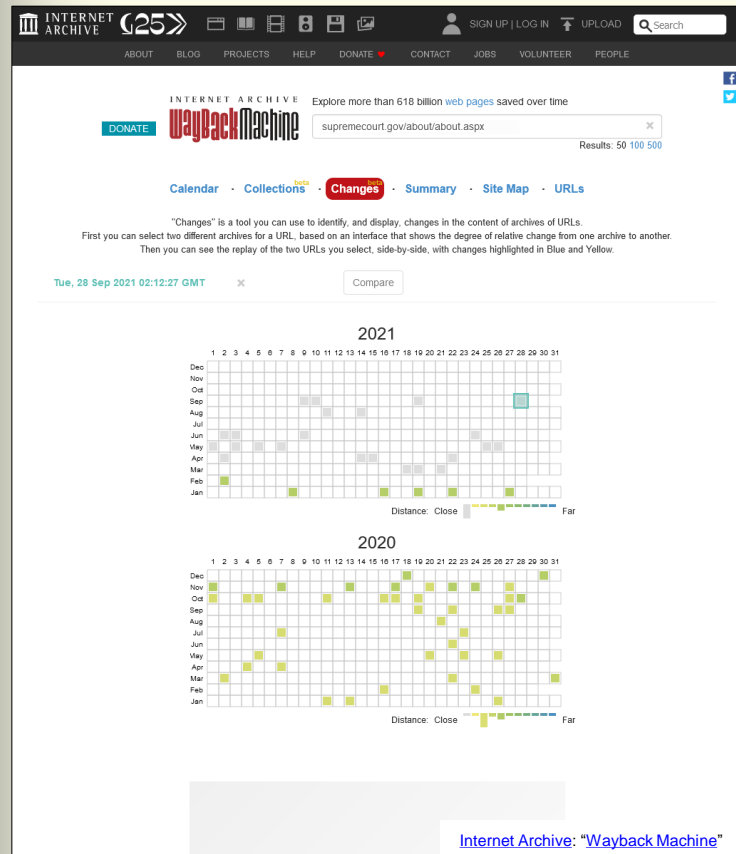
The screenshot shows the 'Changes' tool on the Internet Archive Wayback Machine. The header includes the Internet Archive logo, a '25' anniversary badge, and navigation links: ABOUT, BLOG, PROJECTS, HELP, DONATE, CONTACT, JOBS, VOLUNTEER, PEOPLE. A search bar is in the top right. Below the header, the Wayback Machine logo is prominent, with a 'DONATE' button to its left. A search bar contains the URL 'supremecourt.gov/about/about.aspx' and shows 'Results: 50 100 500'. Navigation links include 'Calendar', 'Collections', 'Changes' (highlighted in red), 'Summary', 'Site Map', and 'URLs'. A descriptive paragraph explains the tool's purpose: identifying and displaying changes in the content of archives of URLs. A 'Compare' button is located below the text. The main content area displays two calendar grids for the years 2021 and 2020. Each grid has months on the y-axis (Jan to Dec) and days on the x-axis (1 to 31). A legend at the bottom of each grid indicates 'Variation: Low' (yellow) and 'Hi' (blue). The 2021 grid shows a single yellow square on April 15th. The 2020 grid shows multiple yellow squares, including April 15th, May 1st, May 2nd, May 3rd, May 4th, May 5th, May 6th, May 7th, May 8th, May 9th, May 10th, May 11th, May 12th, May 13th, May 14th, May 15th, May 16th, May 17th, May 18th, May 19th, May 20th, May 21st, May 22nd, May 23rd, May 24th, May 25th, May 26th, May 27th, May 28th, May 29th, May 30th, May 31st, June 1st, June 2nd, June 3rd, June 4th, June 5th, June 6th, June 7th, June 8th, June 9th, June 10th, June 11th, June 12th, June 13th, June 14th, June 15th, June 16th, June 17th, June 18th, June 19th, June 20th, June 21st, June 22nd, June 23rd, June 24th, June 25th, June 26th, June 27th, June 28th, June 29th, June 30th, July 1st, July 2nd, July 3rd, July 4th, July 5th, July 6th, July 7th, July 8th, July 9th, July 10th, July 11th, July 12th, July 13th, July 14th, July 15th, July 16th, July 17th, July 18th, July 19th, July 20th, July 21st, July 22nd, July 23rd, July 24th, July 25th, July 26th, July 27th, July 28th, July 29th, July 30th, July 31st, August 1st, August 2nd, August 3rd, August 4th, August 5th, August 6th, August 7th, August 8th, August 9th, August 10th, August 11th, August 12th, August 13th, August 14th, August 15th, August 16th, August 17th, August 18th, August 19th, August 20th, August 21st, August 22nd, August 23rd, August 24th, August 25th, August 26th, August 27th, August 28th, August 29th, August 30th, August 31st, September 1st, September 2nd, September 3rd, September 4th, September 5th, September 6th, September 7th, September 8th, September 9th, September 10th, September 11th, September 12th, September 13th, September 14th, September 15th, September 16th, September 17th, September 18th, September 19th, September 20th, September 21st, September 22nd, September 23rd, September 24th, September 25th, September 26th, September 27th, September 28th, September 29th, September 30th, October 1st, October 2nd, October 3rd, October 4th, October 5th, October 6th, October 7th, October 8th, October 9th, October 10th, October 11th, October 12th, October 13th, October 14th, October 15th, October 16th, October 17th, October 18th, October 19th, October 20th, October 21st, October 22nd, October 23rd, October 24th, October 25th, October 26th, October 27th, October 28th, October 29th, October 30th, October 31st, November 1st, November 2nd, November 3rd, November 4th, November 5th, November 6th, November 7th, November 8th, November 9th, November 10th, November 11th, November 12th, November 13th, November 14th, November 15th, November 16th, November 17th, November 18th, November 19th, November 20th, November 21st, November 22nd, November 23rd, November 24th, November 25th, November 26th, November 27th, November 28th, November 29th, November 30th, December 1st, December 2nd, December 3rd, December 4th, December 5th, December 6th, December 7th, December 8th, December 9th, December 10th, December 11th, December 12th, December 13th, December 14th, December 15th, December 16th, December 17th, December 18th, December 19th, December 20th, December 21st, December 22nd, December 23rd, December 24th, December 25th, December 26th, December 27th, December 28th, December 29th, December 30th, December 31st. A footer link reads 'Internet Archive: "Wayback Machine"'. A large grey rectangular area is visible at the bottom of the page.



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Changes tool: choose 28 September 2021 capture



INTERNET ARCHIVE 25

ABOUT BLOG PROJECTS HELP DONATE CONTACT JOBS VOLUNTEER PEOPLE

INTERNET ARCHIVE Explore more than 618 billion web pages saved over time

DONATE Wayback Machine

supremecourt.gov/about/about.aspx

Results: 50 100 500

Calendar · Collections · **Changes** · Summary · Site Map · URLs

"Changes" is a tool you can use to identify, and display, changes in the content of archives of URLs.
First you can select two different archives for a URL, based on an interface that shows the degree of relative change from one archive to another.
Then you can see the replay of the two URLs you select, side-by-side, with changes highlighted in Blue and Yellow.

Tue, 28 Sep 2021 02:12:27 GMT

Compare

2021

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

Dec
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Distance: Close Far

2020

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

Dec
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Distance: Close Far

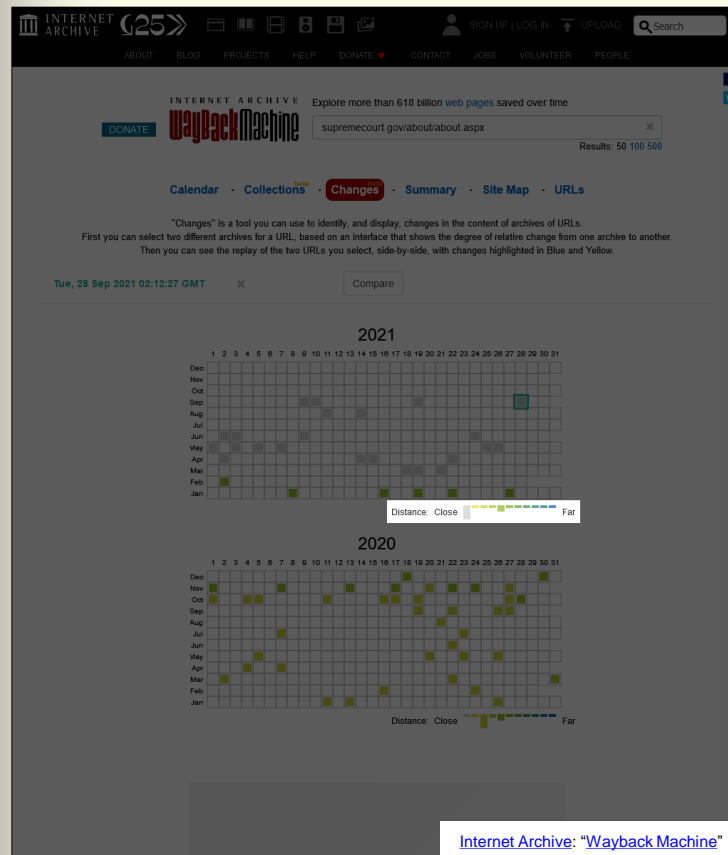
Internet Archive: "Wayback Machine"



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Changes tool: degree of difference key



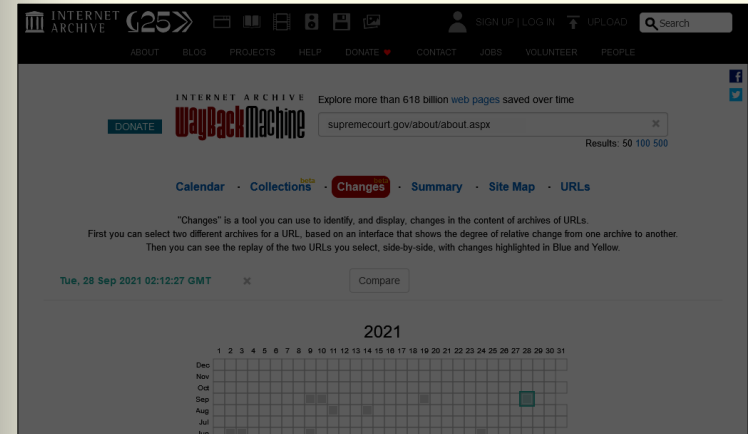
Internet Archive: "[Wayback Machine](#)"



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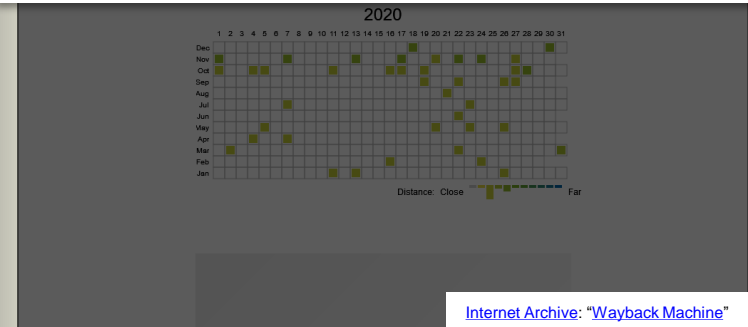
Changes tool: degree of difference key



Distance: Close



Far



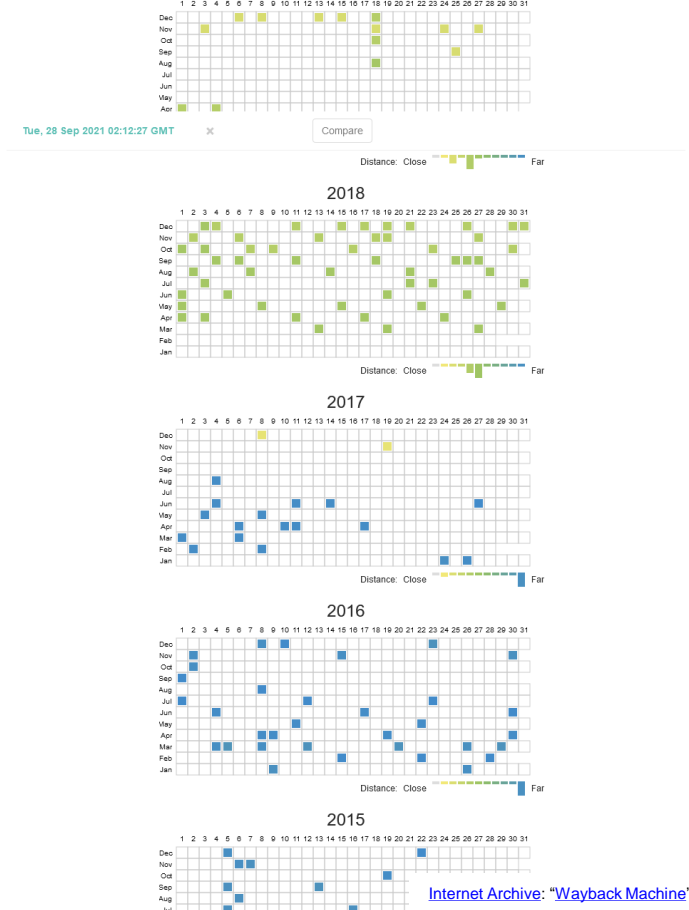
Internet Archive: "[Wayback Machine](#)"



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Changes tool: difference from 2017 captures



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Changes tool: compare w/ 4 August 2017 capture



[Internet Archive: "Wayback Machine"](#)



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Changes tool: two captures selected

INTERNET ARCHIVE 25 Explore more than 618 billion web pages saved over time

[DONATE](#) **Wayback Machine** Results: 50 100 500

[Calendar](#) · [Collections](#) · [Changes](#) · [Summary](#) · [Site Map](#) · [URLs](#)

"Changes" is a tool you can use to identify, and display, changes in the content of archives of URLs.
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Then you can see the replay of the two URLs you select, side-by-side, with changes highlighted in Blue and Yellow.

[Tue, 28 Sep 2021 02:12:27 GMT](#) [Fri, 04 Aug 2017 23:39:27 GMT](#)

2021

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

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Distance: Close Far

2020

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

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Distance: Close Far

[Internet Archive: "Wayback Machine"](#)



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Changes tool: two captures selected

INTERNET ARCHIVE 25

SIGN UP | LOG IN | URL LOAD Search

ABOUT BLOG PROJECTS HELP DONATE CONTACT JOBS VOLUNTEER PEOPLE

INTERNET ARCHIVE Explore more than 618 billion web pages saved over time

DONATE Wayback Machine

supremecourt.gov/about/about.aspx Results: 50 100 500

Calendar Collections ^{back} Changes Summary Site Map URLs

"Changes" is a tool you can use to identify, and display, changes in the content of archives of URLs.
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Tue, 28 Sep 2021 02:12:27 GMT Compare Fri, 04 Aug 2017 23:39:27 GMT

2021

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Distance: Close Far

2020

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

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Distance: Close Far

Internet Archive: "Wayback Machine"



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Changes tool: click *Compare*

INTERNET ARCHIVE 25 Explore more than 618 billion web pages saved over time

[DONATE](#) **Wayback Machine** Results: 50 100 500

[Calendar](#) · [Collections](#) · **Changes** · [Summary](#) · [Site Map](#) · [URLs](#)

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[Tue, 28 Sep 2021 02:12:27 GMT](#) [Fri, 04 Aug 2017 23:39:27 GMT](#)

2021

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

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Distance: Close Far

2020

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

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Distance: Close Far

[Internet Archive: "Wayback Machine"](#)



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Changes tool: compare 28 Sep. 2021 + 4 Aug. 2017 captures

Internet Archive (25) WEB BOOKS VIDEO AUDIO SOFTWARE IMAGES


ABOUT BLOG PROJECTS HELP DONATE CONTACT JOBS VOLUNTEER PEOPLE

Internet Archive Explore more than 618 billion web pages saved over time

Compare any two captures of supremecourt.gov/justices.aspx from our collection of 415 dating from Tue, 23 Mar 2016 to Sat, 09 Oct 2021


Please select a capture: 2021 (95) | Tuesday, 28 Sep 2021 02:12:27 GMT | Please select a capture: Fri 04 Aug 2017 23:30:27 GMT | Request ID: | 2017 (18)

Copy to new window Copy to table options



SUPREME COURT
OF THE UNITED STATES

Search



HOME > ABOUT THE COURT

About the Court

"EQUAL JUSTICE UNDER LAW". These words, written above the main entrance to the Supreme Court Building, express the ultimate responsibility of the Supreme Court of the United States. The Court is the highest tribunal in the Nation for all cases and controversies arising under the Constitution or the laws of the United States. As the final arbiter of the law, the Court is charged with ensuring the American people the benefit of equal justice under law and, thereby, also functions as guardian and interpreter of the Constitution.

The Supreme Court consists of the Chief Justice of the United States and such number of Associate Justices as may be fixed by Congress. The number of Associate Justices is currently fixed at eight (28 U.S.C. § 87). Power to nominate the Justices is vested in the President of the United States, and appointments are made with the advice and consent of the Senate.

Chief Justice of the United States


Associate Justices

Retired Justices

Court Officers assist the Court in the performance of its functions. They include the Clerk of the Court, the Clerk, the Librarian, the Marshal, the Reporter of Decisions, the Court Counsel, the Curator, the Director of Information Technology, and the Public Information Officer.

Court Officers

The Supreme Court of the United States
One First Street, NE, Washington, DC 20543
Phone: 202-556-6000



SUPREME COURT
OF THE UNITED STATES


Search

About the Supreme Court

Justices

- [Current Members of the Supreme Court](#)
- [Current Assignments of Justices](#)
- [Members of the Supreme Court \(1776 to Present\)](#)
- [The Justices' Oath](#)
- [Frequently Asked Questions](#)

The Supreme Court at Work



- [A Brief Overview of the Supreme Court](#)
- [The Court and Constitutional Interpretation](#)
- [The Court and Its Procedures](#)
- [History Guide to Chief Justices](#)

History and Traditions

Internet Archive: "Wayback Machine"

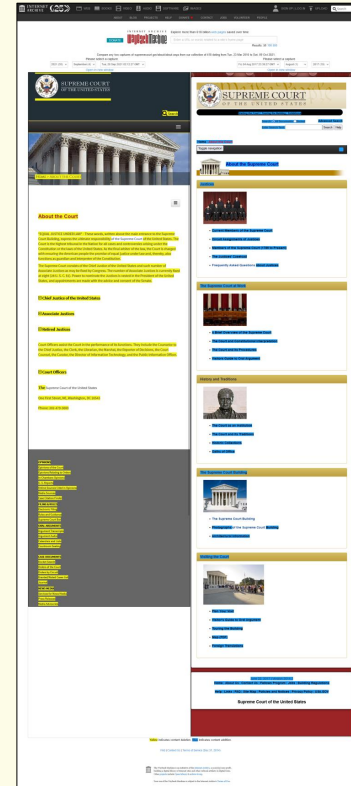


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Changes tool: comparing captures

- yellow highlighted text was deleted
- blue highlighted text was added
- note that the website design has changed significantly, but this isn't specifically detected by the Changes tool
- however, major text changes often accompany major website design changes



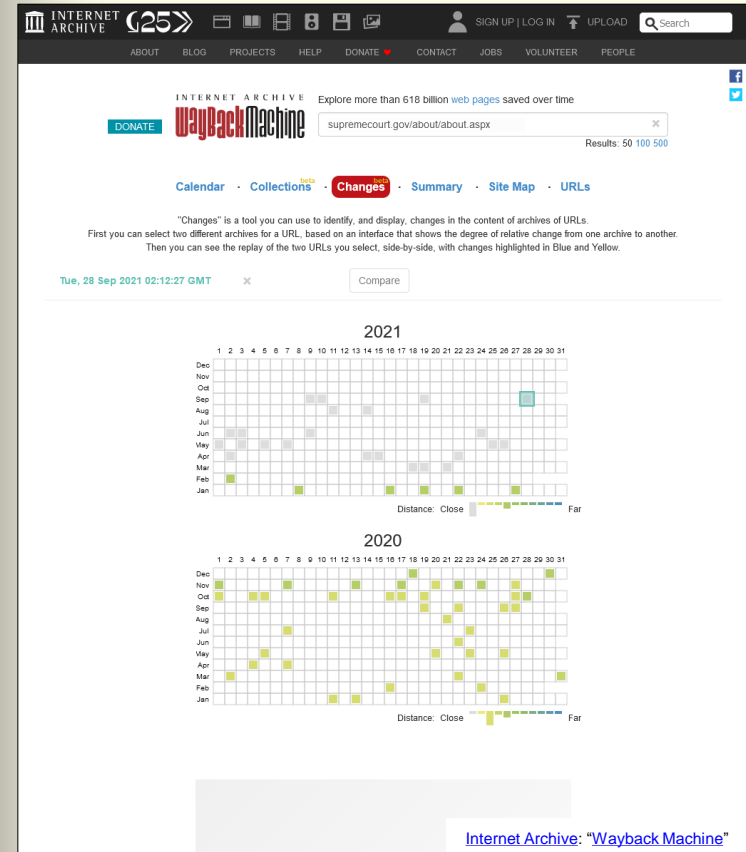
[Internet Archive: "Wayback Machine"](#)



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Changes tool: choose 28 September 2021 capture



INTERNET ARCHIVE 25 Explore more than 618 billion web pages saved over time

[DONATE](#) **Wayback Machine** Results: 50 100 500

[Calendar](#) · [Collections](#) ^{beta} · **[Changes](#)** · [Summary](#) · [Site Map](#) · [URLs](#)

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[Tue, 28 Sep 2021 02:12:27 GMT](#)

2021

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

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Distance: Close Far

2020

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

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Distance: Close Far

[Internet Archive: "Wayback Machine"](#)



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Changes tool: compare w/ 2 February 2021 capture

INTERNET ARCHIVE 25

ABOUT BLOG PROJECTS HELP DONATE CONTACT JOBS VOLUNTEER PEOPLE

INTERNET ARCHIVE Explore more than 618 billion web pages saved over time

DONATE WayBackMachine

supremecourt.gov/about/about.aspx Results: 50 100 500

Calendar Collections ^{back} Changes Summary Site Map URLs

"Changes" is a tool you can use to identify, and display, changes in the content of archives of URLs.
First you can select two different archives for a URL, based on an interface that shows the degree of relative change from one archive to another.
Then you can see the replay of the two URLs you select, side-by-side, with changes highlighted in Blue and Yellow.

Tue, 28 Sep 2021 02:12:27 GMT X Compare

2021

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Distance: Close Far

2020

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Distance: Close Far

Internet Archive: "Wayback Machine"



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Changes tool: two captures selected

The screenshot shows the Internet Archive Wayback Machine's 'Changes' tool. At the top, the navigation bar includes links for ABOUT, BLOG, PROJECTS, HELP, DONATE, CONTACT, JOBS, VOLUNTEER, and PEOPLE. The main header features the Internet Archive logo and the text 'Explore more than 618 billion web pages saved over time'. Below this is a search bar with the URL 'supremecourt.gov/about/about.aspx' and a search button. The results show 'Results: 50 100 500'. The 'Changes' tool is selected in the navigation menu, which also includes Calendar, Collections, Summary, Site Map, and URLs. A description of the 'Changes' tool is provided, explaining its purpose and how to use it. Two date selectors are visible: 'Tue, 28 Sep 2021 02:12:27 GMT' and 'Tue, 02 Feb 2021 19:04:56 GMT'. Below these are two calendar grids for the years 2021 and 2020, showing the relative distance of captures from the selected dates. A legend at the bottom indicates 'Distance: Close' (yellow) and 'Far' (blue).

Internet Archive: "Wayback Machine"



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Changes tool: click *Compare*

INTERNET ARCHIVE 25 Explore more than 618 billion web pages saved over time

[DONATE](#) **Wayback Machine** Results: 50 100 500

[Calendar](#) · [Collections](#) · [Changes](#) · [Summary](#) · [Site Map](#) · [URLs](#)

"Changes" is a tool you can use to identify, and display, changes in the content of archives of URLs.
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Then you can see the replay of the two URLs you select, side-by-side, with changes highlighted in Blue and Yellow.

[Tue, 28 Sep 2021 02:12:27 GMT](#) [Tue, 02 Feb 2021 19:04:56 GMT](#)

2021

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
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Distance: Close Far

2020

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
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Distance: Close Far

[Internet Archive: "Wayback Machine"](#)



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Changes tool: compare 28 Sep. 2021 + 2 Feb. 2021 captures

The image displays a side-by-side comparison of the Supreme Court of the United States website, showing changes between two dates: September 28, 2021, and February 2, 2021. The website is titled "About the Court" and provides information about the Court's structure, including the Chief Justice, Associate Justices, Retired Justices, and Court Officers. The website also lists the names of the Court Officers and their titles, such as the Clerk, Librarian, Reporter of Decisions, Court Counsel, Curator, Director of Information Technology, and Public Information Officer. The website is organized into sections, with the "About the Court" section at the top, followed by "Chief Justice of the United States", "Associate Justices", "Retired Justices", and "Court Officers". The "Court Officers" section lists the names of the Court Officers and their titles, such as the Clerk, Librarian, Reporter of Decisions, Court Counsel, Curator, Director of Information Technology, and Public Information Officer. The website also includes a section for "The Supreme Court of the United States" with contact information and a section for "OPINIONS" with links to various opinion pages. The website is designed with a clean, professional layout, featuring a blue and white color scheme and a clear hierarchy of information.



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Internet Archive: "Wayback Machine"

The path forks...

As the story reaches a turning point, the speaking figure again quiets. The screen at the front of the room abruptly changes once more. You feel a sense of déjà vu...



"You are here:" by Paul Thompson under CC BY-ND 2.0

questions



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“Editing” IAWM contents



“Punakaiki Pancake Rocks” by [Ruth Hartnup](#) under [CC BY 2.0](#)



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Can IAWM contents be edited?

- not as such; archive is append-only
- missing content may be captured later
- content can be excluded from access
- IA has made no public claims that content is ever deleted
- individual webpages or web resources can be manually archived



"Stone engraving" by [Jinx McCombs](#) under [CC BY-ND 2.0](#)



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Exclusion requests + crawler directives

exclusion requests

- domain owner can [request exclusion](#) of their content from IAWM
- criteria unclear, but IA exercises discretion
- if granted, IAWM access to content will be disabled + IA archiving will cease

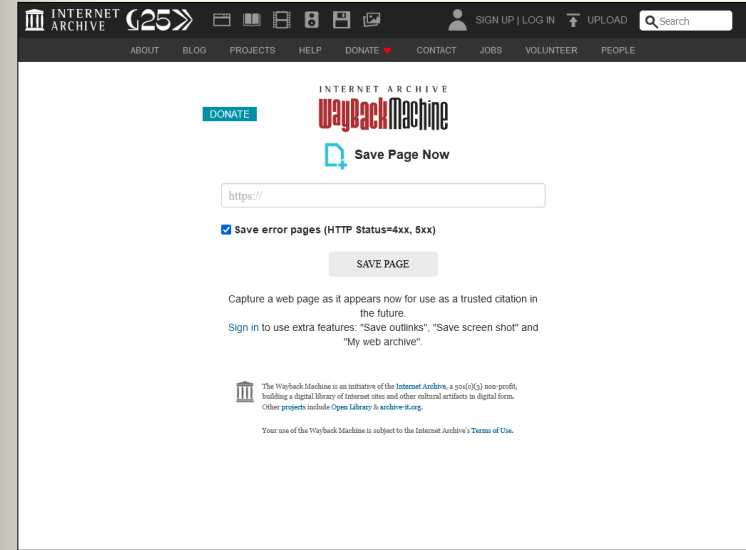
crawler directives

- domain owner can [configure a robots.txt file to ward off](#) IA archiving agents
- again, [IA exercises discretion](#)
- updates to robots.txt directives can restore access



IAWM Save Page Now feature

- manually archive to IAWM a real-time webpage snapshot
- good habit when relying on live web evidence
- works for error pages (i.e., document absence)
- when signed in, can archive current webpage + 1 hop out



Internet Archive: "Wayback Machine"



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"You are here:" by Paul Thompson under CC BY-ND 2.0

questions



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IAWM in the legal context

- authentication + admissibility
- patents + IAWM



"Columns" by Joe Campbell under CC BY-SA 2.0



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Authentication + admissibility



"Dollar" by [Images Money](#) under [CC BY 2.0](#)



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Authentication + admissibility overview

- IAWM cited in 300+ U.S. federal court cases
- harder to authenticate than other web content
 - archived vs. live site discrepancies
 - IAWM reliability disclaimers
 - IA is NGO
 - third party providing first party records (hearsay)
- strategies include:
 - judicial notice
 - IA affidavit
 - witness w/ personal knowledge
 - expert witness
 - mutual stipulation



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Judicial notice (FRE 201)

Wikipedia

*“Judicial notice is a rule in the law of evidence that allows a fact to be introduced into evidence if the truth of that fact is so notorious or well known, or so authoritatively attested, that it **cannot reasonably be doubted**...Facts and materials admitted under judicial notice are accepted without being formally introduced by a witness or other rule of evidence”*

[Wikipedia: "Judicial notice"](#)

FRE 201

Judicial Notice of Adjudicative Facts

- b. Kinds of Facts That May Be Judicially Noticed. The court may judicially notice a fact that is not subject to reasonable dispute because it:
 - 2. can be accurately and readily determined from sources whose accuracy cannot reasonably be questioned.

[Legal Information Institute: "Rule 201. Judicial Notice of Adjudicative Facts | Federal Rules of Evidence"](#)



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Authentication via judicial notice

- efficient but inconsistent + jurisdiction-sensitive
- judges may themselves introduce IAWM evidence
- more likely to prevail in absence of specific assertions of unreliability



"Earthrise" by [Bill Anders](#) under [Public Domain](#)



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Authentication via IA affidavit

- reliable + efficient
- has only failed when incorrectly applied
- works best for simple cases
- but less ideal when conclusions require interpretation



["Paperwork"](#) by [Damian Gadal](#) under [CC BY 2.0](#)



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IA affidavit guidance

Do I really need an affidavit from the Internet Archive?

No. Please consider alternatives to an affidavit from the Internet Archive. Judicial notice and stipulation to a document's authenticity are two typical and straightforward options that might be used instead of an affidavit. Since our resources are limited, we urge you to pursue these alternatives before coming to us with authentication requests.

Does the Internet Archive's affidavit mean that the printout was actually the page posted on the Web at the recorded time?

The Internet Archive's affidavit only affirms that the printed document is a true and correct copy of our records. It remains your burden to convince the finder of fact what pages were up when.

[Internet Archive: "Legal FAQ"](#)



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Witness w/ personal knowledge – FRE 901(b)(1)

Authenticating or Identifying Evidence

- b) Examples. The following are examples only – not a complete list – of evidence that satisfies the requirement:
 - 1) Testimony of a Witness with Knowledge. Testimony that an item is what it is claimed to be.

[Legal Information Institute: "Rule 901. Authenticating or Identifying Evidence | Federal Rules of Evidence"](#)



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Authentication via witness w/ personal knowledge

- more effective when leveraging witness w/ personal knowledge of historical web content
- less effective when instrumentally entering into record a comparison performed by a random person



"One year + of journals" by [Pain Chaud](#) under [CC BY-ND 2.0](#)



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Expert witnesses – FRE 702

Testimony by Expert Witnesses

- a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
- b) the testimony is based on sufficient facts or data;
- c) the testimony is the product of reliable principles and methods; and
- d) the expert has reliably applied the principles and methods to the facts of the case.

[Legal Information Institute: "Rule 702. Testimony by Expert Witnesses | Federal Rules of Evidence"](#)



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Frye + Daubert standards

Frye standard

- established in [Frye v. United States, 293 F. 1013 \(D.C. Cir. 1923\)](#)
- “...the thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs.”

[Legal Information Institute: “Frye Standard”](#)

Daubert standard

- established in [Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579 \(1993\)](#)
- “...the trial judge...must make a preliminary assessment of whether the testimony's underlying reasoning or methodology is scientifically valid and properly can be applied to the facts at issue.”

[Legal Information Institute: “Daubert Standard”](#)



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Authentication via expert witness

- reliable but more involved + less-used mechanism
- use when interpretation, explanation, or qualification needed
- expert witnesses have included:
 - digital forensics specialists
 - patent examiners
 - web archiving professional(s)



["Test tubes and other recipients in chemistry lab"](#) by [Old Photo Profile](#) under [CC BY 2.0](#)



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Admissibility trends summary

– U.S. federal courts

	judicial notice		IA standard affidavit		witness w/ personal knowledge		expert witness	
	yes	no	yes	no	yes	no	yes	no
admitted?	yes	no	yes	no	yes	no	yes	no
U.S. district court	44	11	12	2	6	3	7	0
U.S. circuit court	1	2	2	0	1	1	2	0



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The path forks...

As the story reaches a turning point, the speaking figure again quiets. The screen at the front of the room abruptly changes once more. You feel a sense of déjà vu...



["You are here:"](#) by [Paul Thompson](#) under [CC BY-ND 2.0](#)

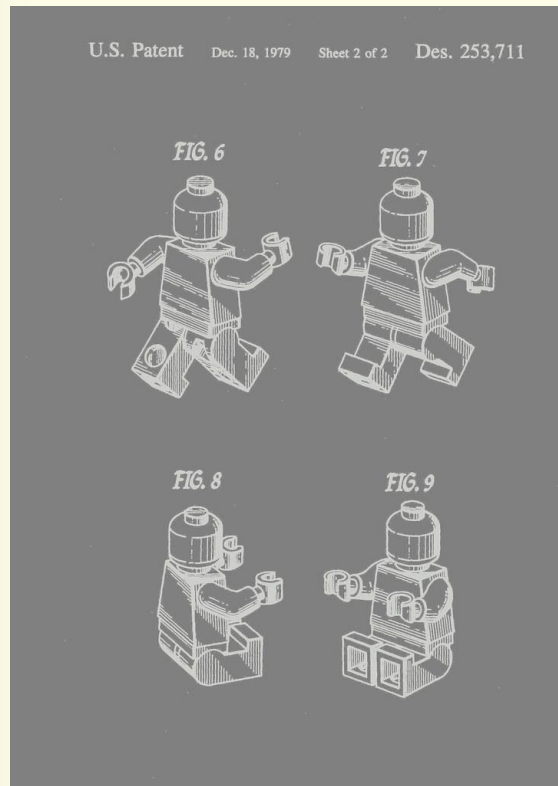
questions



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Patents + IAWM



"US patent 253711 - Toy figure" by [Vera de Kok](#) under [CC BY 2.0](#)



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Patents + IAWM

- IAWM referenced in 200+ PTAB decisions
 - regularly used for citations of prior art in issued patents
 - USPTO doesn't apply FRE
 - useful for timestamping patent disclosures
- patentability voided by description of invention in a “printed publication” prior to filing date
 - reference qualifies as a printed publication if it, “*has been disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art, exercising reasonable diligence, can locate it.*”
 - [In re Wyer, 655 F.2d 221 \(C.C.P.A. 1981\)](#), quoting [I.C.E. Corp. v. Armco Steel Corp., 250 F. Supp. 738 \(S.D.N.Y. 1966\)](#)



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Manual of Patent Examining Procedure (MPEP) guidance

*“Prior art obtained via the Wayback Machine® sets forth a **prima facie case that the art was publicly accessible at the date and time provided in the time stamp.** The burden then shifts to the applicant should they wish to challenge the authenticity, reliability or accessibility of such information.”*

[United States Patent and Trademark Office: "2128 'Printed Publications' as Prior Art \[R-10.2019\]"](#)

Manual of PATENT EXAMINING PROCEDURE

Original Ninth Edition, March 2014
Latest Revision June 2020 [R-10.2019]

U.S. DEPARTMENT OF
COMMERCE

United States Patent and
Trademark Office



Rev. 10.2019, June 2020

[United States Patent and Trademark Office:
"Manual of Patent Examining Procedure \(MPEP\)"](#)



#AALL22

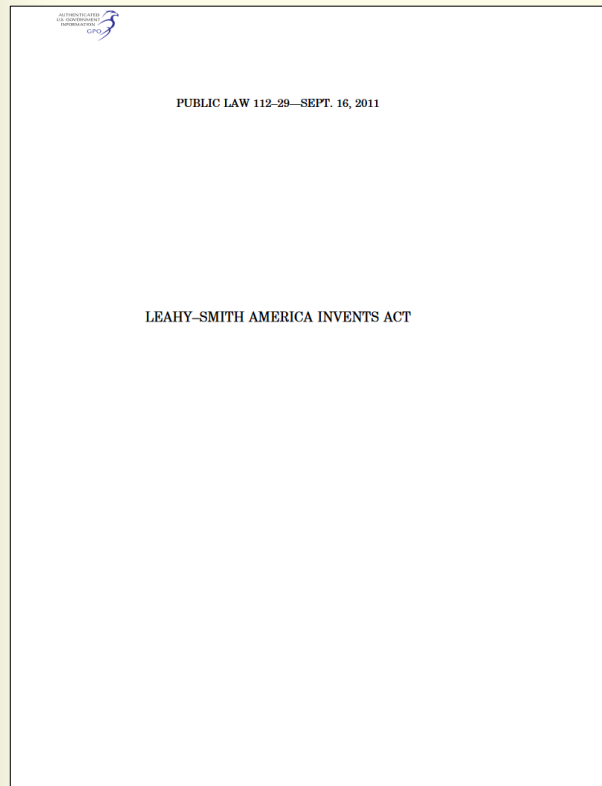
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America Invents Act FAQ

Question: “*For Web references, **does the USPTO use archive.org (aka, ‘The Wayback Machine’)** to get the actual publication [sic] date rather than printout date of the Web reference? (Question: FITF1058)*”

Answer: “**Yes, examiners use ‘The Wayback machine’** as a source of information to determine when a Web reference was first made available to the public.”

[United States Patent and Trademark Office: “America Invents Act \(AIA\) Frequently Asked Questions”](#)



[United States Government Publishing Office: “PUBL029.PS - PLAW-112publ29.pdf” \(PDF\)](#)



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The path forks...

As the story reaches a turning point, the speaking figure again quiets. The screen at the front of the room abruptly changes once more. You feel a sense of déjà vu...



["You are here:"](#) by [Paul Thompson](#) under [CC BY-ND 2.0](#)

questions



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IAWM temporal dynamics

- [timestamping content changes](#)
- [temporal \(in\)coherence](#)



"clock world" by Mathanki Kodavasal under [CC BY-SA 2.0](#)



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Timestamping content changes



["Tree rings and Arlington Estate history - Arlington National Cemetery - 2013-08-24"](#) by [Tim Evanson](#) under [CC BY-SA 2.0](#)



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Sources of temporal info

conspicuous

- (system-generated) datetime string in webpage text
- IAWM capture timestamp

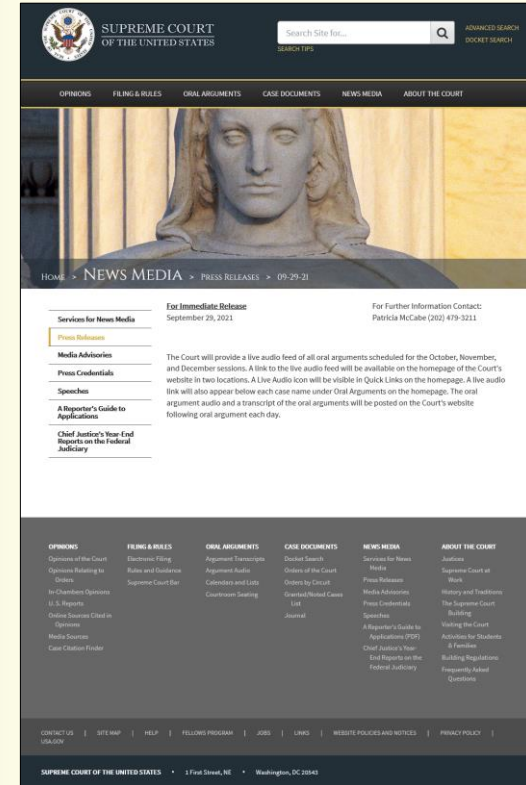
less obvious

- (system-generated) datetime string in webpage source code
- Google [before: operator](#)
- Twitter [until: operator](#)
- IAWM capture datetime of webpage w/ inlinks
- web server \rightleftharpoons client network headers (e.g., X-Archive-Orig-last-modified)
- timestamps in embedded image metadata (e.g., [Exif](#), [XMP](#))



When was a webpage first published?

- when was the webpage for the oral arguments live audio stream first made available?
- press release said it would go live at the start of October Term 2021
- link would be published on the home page



[Supreme Court of the United States: "Press Releases - pr_09-29-21"](#)



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When was a webpage first published?

SUPREME COURT OF THE UNITED STATES

Search Site for... ADVANCED SEARCH DOCKET SEARCH

SEARCH TIPS

OPINIONS **FILING & RULES** **ORAL ARGUMENTS** **CASE DOCUMENTS** **NEWS MEDIA** **ABOUT THE COURT**

Out of concern for the health and safety of the public and Supreme Court employees, the Supreme Court Building will be closed to the public until further notice. The Building will remain open for official business. Please see all COVID-19 announcements [here](#).

Quick Links

Today at the Court - Sunday, Feb 27, 2022

Building closed to the public

- Out of concern for the health and safety of the public and Supreme Court employees, the Supreme Court Building will be closed to the public until further notice. The Building will remain open for official business. Please see all COVID-19 announcements [here](#).
- All public lectures and visitor programs are temporarily suspended.

Calendar Info/Key

- Argument Days
- Non-argument Days
- Conference Days
- Opinion Issuance Days
- Order List Issuance Days
- Holiday

Oral Arguments
Week of Monday, February 21

Tuesday, February 22

Ysleta del Sur Pueblo v. Texas (20-493)

Preserved in: Facebook Kloutout Feb. 26/22

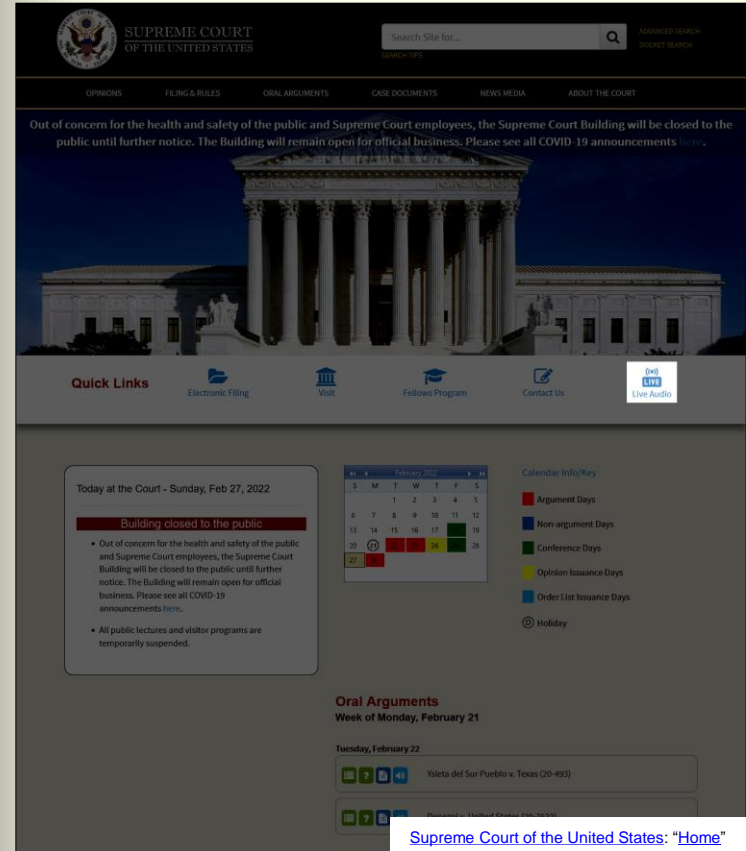
[Supreme Court of the United States: "Home"](#)



#AALL22

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When was a webpage first published?



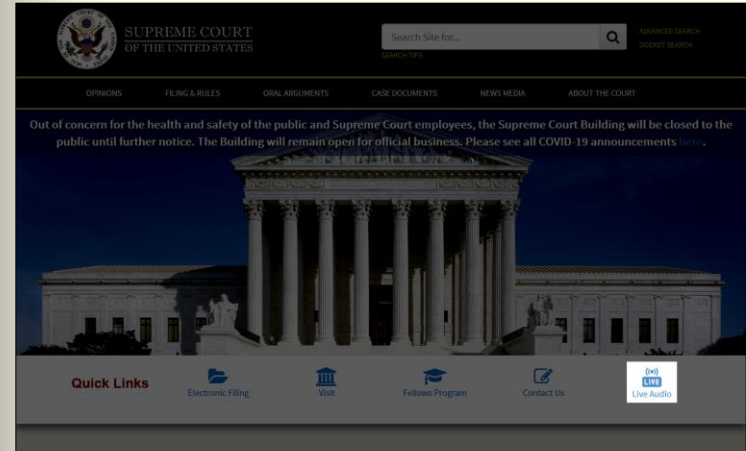
[Supreme Court of the United States: "Home"](#)



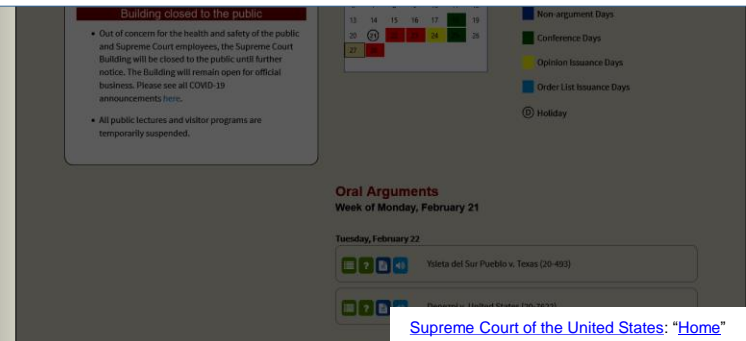
#AALL22

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When was a webpage first published?



www.supremecourt.gov/oral_arguments/live.aspx



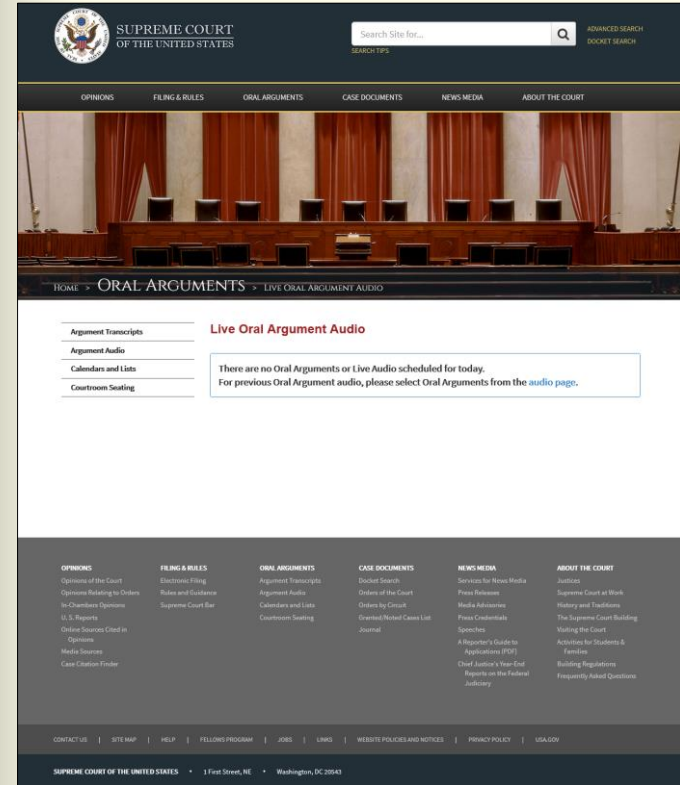
Supreme Court of the United States: "Home"



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When was a webpage first published?



Supreme Court of the United States: "Live Oral Argument Audio"



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When did link appear on home page?

The screenshot shows the official website of the Supreme Court of the United States. At the top is the Court's seal and name, followed by a search bar and links for "ADVANCED SEARCH" and "DOCKET SEARCH". A navigation bar contains links for "OPINIONS", "FILING & RULES", "ORAL ARGUMENTS", "CASE DOCUMENTS", "NEWS MEDIA", and "ABOUT THE COURT". A prominent banner at the top of the main content area reads: "Out of concern for the health and safety of the public and Supreme Court employees, the Supreme Court Building will be closed to the public until further notice. The Building will remain open for official business. Please see all COVID-19 announcements [here](#)." Below this banner is a large image of the Supreme Court Building. A "Quick Links" section features icons for "Electronic Filing", "Visit", "Fellows Program", "Contact Us", and "Live Audio". The main content area is divided into three columns. The left column, titled "Today at the Court - Sunday, Feb 27, 2022", contains a red header "Building closed to the public" and two bullet points: "Out of concern for the health and safety of the public and Supreme Court employees, the Supreme Court Building will be closed to the public until further notice. The Building will remain open for official business. Please see all COVID-19 announcements [here](#)." and "All public lectures and visitor programs are temporarily suspended." The middle column displays a calendar for February 2022, with dates 20, 21, 22, 23, 24, 25, and 26 highlighted in various colors. The right column, titled "Calendar Info/Key", lists: "Argument Days" (red square), "Non-argument Days" (blue square), "Conference Days" (green square), "Opinion Issuance Days" (yellow square), "Order List Issuance Days" (light blue square), and "Holiday" (circle with a dot). Below the calendar, the "Oral Arguments" section for the "Week of Monday, February 21" shows a list for "Tuesday, February 22" with the case "Ysleta del Sur Pueblo v. Texas (20-493)". At the bottom of the page, a small text reads "Powered by: Fastback Group, Inc. 9/20/21".

Supreme Court of the United States: "Home"

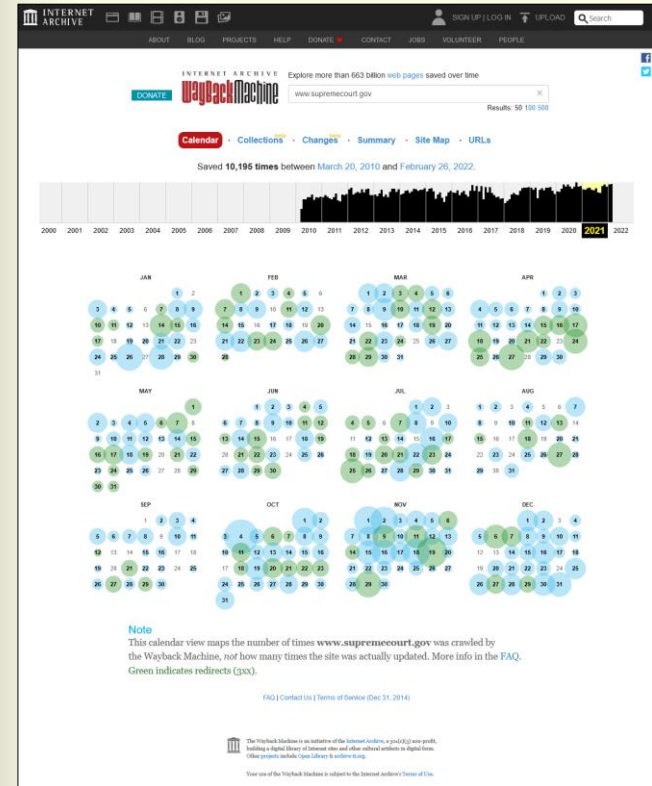


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When did link appear on home page?

- brute force (i.e. try inside-outside dates, then narrow down)
- use [Archive-It](#) to [search for “live audio”](#)
- use [CDX Server API](#) to bulk retrieve captures, then run local full-text search for “live audio”



[Internet Archive: “Wayback Machine”](#)



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When did link appear on home page?

Supreme Court of the United States

Out of concern for the health and safety of the public and Supreme Court employees, the Supreme Court Building will be closed to the public until further notice. The Building will remain open for official business. Please see all COVID-19 announcements [here](#).

Quick Links

- Electronic Filing
- Visit
- Fellows Program
- Contact Us
- Live Audio

Today at the Court - Monday, Oct 4, 2021

Building closed to the public

- Out of concern for the health and safety of the public and Supreme Court employees, the Supreme Court Building will be closed to the public until further notice. The Building will remain open for official business. Please see all COVID-19 announcements [here](#).
- The Court will release an [order list](#) at 9:30 a.m.
- The Court will convene for an argument session in the Courtroom at 10 a.m. The Justices will hear two oral arguments. As a public health precaution, the Courtroom will be closed to the public, but an audio feed will be live-streamed and the audio will be available on the Court's website later in the day.
- All public lectures and visitor programs are temporarily suspended.

Calendar Info/Key

- Argument Days
- Non-argument Days
- Conference Days
- Order List Issuance Days
- Holiday

Oral Arguments
Week of Monday, October 4

Monday, October 4

- Mississippi v. Tennessee (Orig. 143)
- Wooden v. United States (2021-143)

[Internet Archive: "Home"](#)

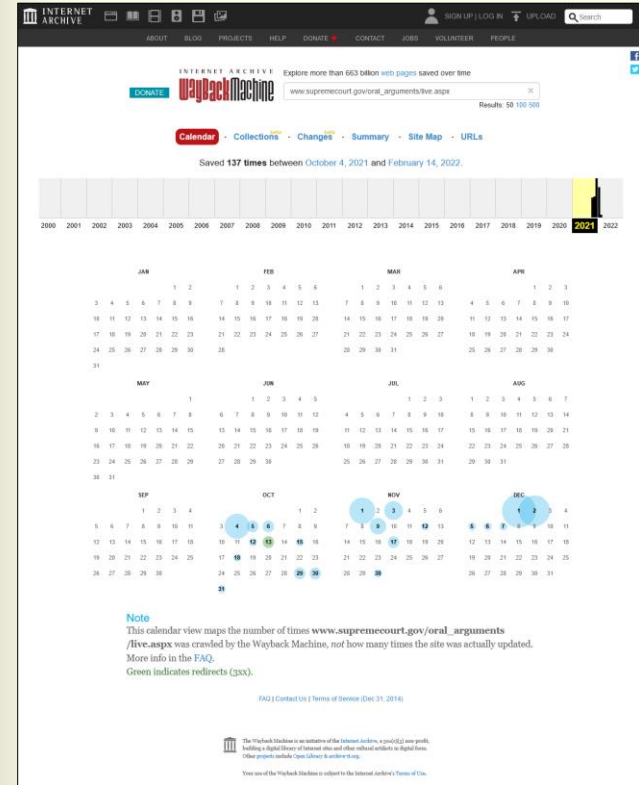


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Captures of webpage itself

- timeline histogram only shows captures for calendar years 2021 + 2022, up to current date
- click back to 2021
- IAWM calendar page shows captures dating back to 4 October 2021



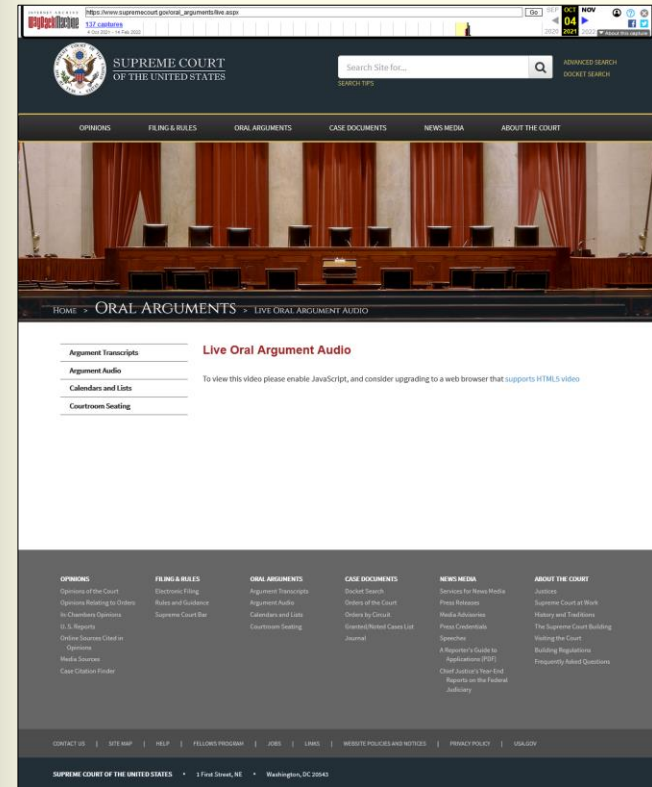
Internet Archive: "Wayback Machine"



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First capture of webpage: 4 October 2021



[Internet Archive: "Live Oral Argument Audio"](#)

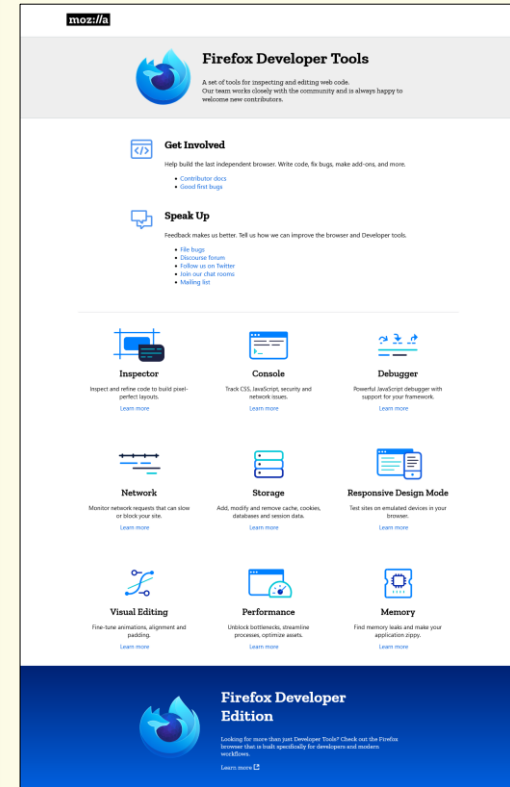


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Browser web developer tools

- IAWM can re-present original network communications b/t archiving agent + web host
- most modern browsers have built-in “developer tools” enabling review of these communications
- communications sometimes include metadata related to content datetimes



Mozilla: ["Firefox Developer Tools"](#)



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Network panel shows response headers

The screenshot displays the Windows Task Manager interface. The 'Performance' tab is active, showing the CPU usage at 100%. The 'Processes' pane on the left lists various running processes, including System Idle Process, System, smss.exe, csrss.exe, explorer.exe, and many instances of chrome.exe. The 'Performance' pane on the right shows the CPU usage at 100% with a graph and a 'Details' link.



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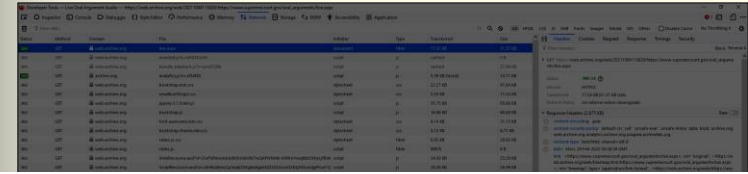
Network panel shows response headers

[illegible]

#AALL22

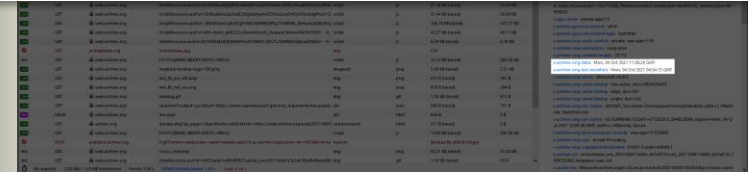
AALL / YOUR LEGAL KNOWLEDGE NETWORK™

Network panel shows response headers



x-archive-org-date: Mon, 04 Oct 2021 11:36:29 GMT

x-archive-org-last-modified: Mon, 04 Oct 2021 04:34:15 GMT



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Timestamping content changes

when first published

- this example was amenable to multiple approaches
- traces via diverse services increase precision + confidence
- more typical to be working w/ fragments
- key limitations on assertions:
 - generally only establish *no later than*
 - don't necessarily establish *the moment when*

when continuously available

- use similar techniques to document availability across successive short intervals
- continuous intermediate availability more reasonable to assume than up-down-up
- can get complicated for content situated deep in a website across redesigns or platform changes
 - content may persist, but specific web address (which is what IAWM keys off of) may change



The path forks...

As the story reaches a turning point, the speaking figure again quiets. The screen at the front of the room abruptly changes once more. You feel a sense of déjà vu...



["You are here:"](#) by [Paul Thompson](#) under [CC BY-ND 2.0](#)

questions



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Temporal (in)coherence



["Jumble of Clocks Gare St Lazare - L'Heure de tous Arman"](#) by [Amaury Laporte](#) under [CC BY 2.0](#)



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Temporal (in)coherence

http://www.underground.com/cgi-bin/findweather/getForecast?query=50593

24 Celsius 77.0 Fahrenheit 11.1 Celsius 53.8 Fahrenheit

Find the Weather for any City, State or ZIP Code, or Airport Code or Country

Features: Wunder Photos, NEPAD radar, Regional Radar, NEW Low-Satellite, Maps, The Planner

Member Benefits: No Ads, Weather Email \$5 a year, Signup Here

Email: [redacted]@gmail.com, Password: [redacted]

Print This Page

Up: Temperature, Heat Index, Windchill, Humidity, Radar, Dew Point, Wind, Visibility, Visible Satellite, Satellite, Frost, Snow Depth, Jet Stream, Flight Rules

Health Map: UV Forecast, Air Quality, Peak Air Quality Index

International: United States, Canada, Mexico, Central America, South America, Northern Asia, Southern Asia, Europe, Australia, Africa, Islands

Information: Need Help?, Link to Us, About Us, Custom Weather, Newspaper, Weather, Advertising, State Farm, State Farm.com

Auto Quotes, Video Center, Natural Disasters

Varina, Iowa [see this page to your Favorites] [Weather Email]

Local Time: 1:09 PM CST Sat My Timezone

Current Conditions: Updated: 12:55 PM CST on December 09, 2004. Observed at Storm Lake, Iowa (History). Elevation: 1486 ft / 453 m.

41 °F / 5 °C

Light Drizzle

Windchill: 37 °F / 3 °C

Humidity: 100%

Dew Point: 41 °F / 5 °C

Wind: 6 mph / 9 km/h from the South

Pressure: 29.54 in / 1003 hPa

Visibility: 5.0 miles / 8.0 kilometers

UV: 1 out of 12

Clouds: Overcast 6000 ft / 1803 m

Show Full METARs (help)

Local Radar, Regional Radar, All Conditions, Trip Planner, Personal Weather Stations

5-Day Forecast for ZIP Code 50593

Thu	Fri	Sat	Sun	Mon
43° 20°	36° 22°	47° 34°	41° 15°	31° 15°
Chance of Rain	Mostly Cloudy	Mostly Cloudy	Partly Cloudy	Partly Cloudy
Detail	Detail	Detail	Detail	Detail

Click Detail for hourly wind, temperature, humidity and UV forecasts.

Alternate Computer Forecast: [AVIOL MOS Weather Graph](#) | [Local Allergy Info from Polen.com](#)

Meet Local: [weather.state.ia.gov](#) and Travel Guides for Varina, IA

Unrated reviews and advice for Varina, Iowa and other cities

In Varina: [Best Rates GUARANTEED](#), [Discount Hotels](#)

Wunder Photos: [Show Varina or Iowa](#)

Nowcast as of 11:42 am CST on December 9, 2004

Now: Dense fog will persist along and west of Highway 169 through the early afternoon. Locations from Algonia to Estherville can expect visibilities to remain around a quarter mile or less with localized areas in low lying spots under one eighth of a mile.

Forecast for Pocahontas County

Updated: 11:20 am CST on December 9, 2004

No Active Advisories ([View Severe Weather](#))

This Afternoon: Cloudy with a chance of light rain showers. High in the lower 40s. West wind 10 to 15 mph. Chance of rain 30 percent.

Tonight: Light rain likely through the evening. Light snow likely after midnight. Little or no accumulation. Low around 30. Northwest wind 15 to 20 mph. Chance of precipitation 60 percent.

Friday: Mostly cloudy and breezy. A chance of light snow in the morning. High in the upper 30s. North wind 15 to 25 mph. Chance of snow 30 percent.

Friday Night: Partly cloudy. Low in the lower 20s. Northwest wind 15 to 20 mph.

Saturday: Partly cloudy. Not as cool with high in the upper 40s. Southwest wind 10 to 15 mph.

Saturday Night: Mostly cloudy and not as cool. Low in the lower 30s.

Sunday: Partly cloudy and very windy. High around 40. Temperature steady or slowly falling in the afternoon.

Sunday Night: Partly cloudy and brisk. Much colder. Low around 15.

Monday: Mostly sunny. Cooler with high around 30.

Scott G. Ainsworth et al: "Only One Out of Five Archived Web Pages Existed as Presented"

Internet Archive: "Weather Underground: Varina, Iowa Forecast"



#AALL22

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Temporal (in)coherence

The screenshot shows the Weather Underground website for Varina, Iowa. The page includes a search bar, a sidebar with navigation links, and a main content area with current conditions, a 5-day forecast, and a detailed hourly forecast.

Current Conditions
 Updated: 12:55 PM CST on December 09, 2004
 Observed at Storm Lake, Iowa (History)
 Elevation: 1486 ft / 453 m

5-Day Forecast for ZIP Code 50593

Thu	Fri	Sat	Sun	Mon
43° / 20° Chance of Rain	36° / 22° Mostly Cloudy	47° / 34° Mostly Cloudy	41° / 15° Partly Cloudy	31° / 15° Partly Cloudy

Hourly Forecast for Pechonhas County
 Updated: 11:20 am CST on December 9, 2004
 No Active Advisories (No Severe Weather)

This Afternoon
 Cloudy with a chance of light rain showers. High in the lower 40s. West wind 10 to 15 mph. Chance of rain 30 percent.

Tonight
 Light rain likely through the evening. Light snow likely after midnight. Little or no accumulation. Low around 30. Northwest wind 15 to 20 mph. Chance of precipitation 60 percent.

Friday
 Mostly cloudy and breezy. A chance of light snow in the morning. High in the upper 30s. North wind 15 to 20 mph. Chance of snow 30 percent.

Friday Night
 Partly cloudy. Low in the lower 20s. Northwest wind 15 to 20 mph.

Saturday
 Partly cloudy. Not as cool with high in the upper 40s. Southwest wind 10 to 15 mph.

Saturday Night
 Mostly cloudy and not as cool. Low in the lower 30s.

Sunday
 Partly cloudy and very windy. High around 40. Temperature steady or slowly falling in the afternoon.

Sunday Night
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Monday
 Mostly sunny. Cooler with high around 30.

Scott G. Ainsworth et al: "Only One Out of Five Archived Web Pages Existed as Presented"

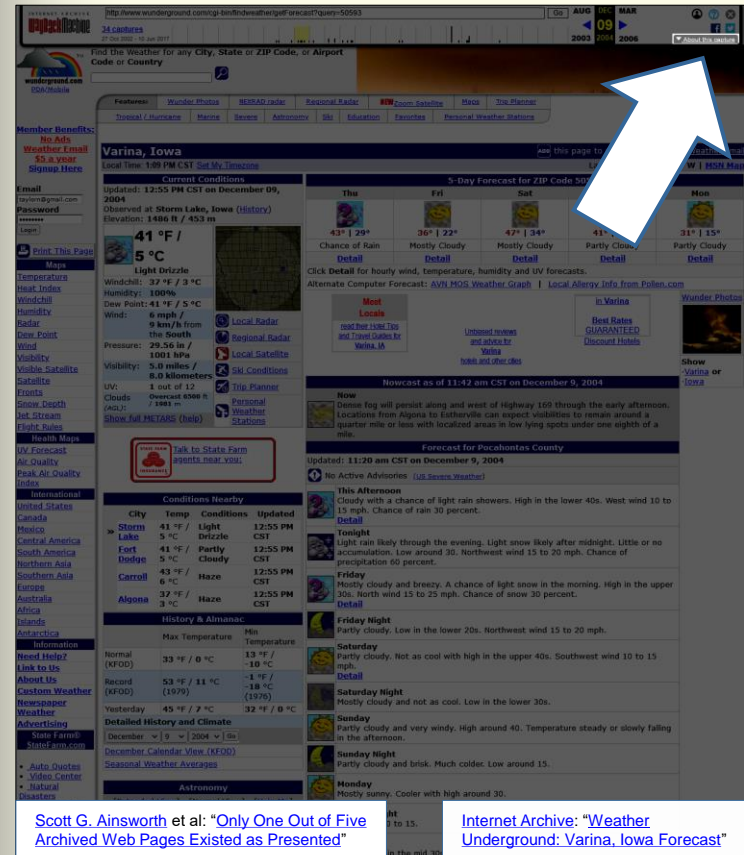
Internet Archive: "Weather Underground: Varina, Iowa Forecast"



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Temporal (in)coherence



The screenshot shows the Weather Underground website for Varina, Iowa. The page displays current conditions, a 5-day forecast, and a detailed hourly forecast. A large white arrow points to the '5-Day Forecast for ZIP Code 50590' section.

Current Conditions
 Updated: 12:55 PM CST on December 09, 2004
 Observed at Storm Lake, Iowa (History)
 Elevation: 1486 ft / 453 m

5-Day Forecast for ZIP Code 50590

Thu	Fri	Sat	Sun	Mon
43° 20° Chance of Rain	36° 22° Mostly Cloudy	47° 34° Mostly Cloudy	41° 31° Partly Cloudy	31° 15° Partly Cloudy
Detail	Detail	Detail	Detail	Detail

Hourly Forecast
 Updated: 11:20 am CST on December 9, 2004
 No Active Advisories (Use Severe Weather)

This Afternoon
 Cloudy with a chance of light rain showers. High in the lower 40s. West wind 10 to 15 mph. Chance of rain 30 percent.

Tonight
 Light rain likely through the evening. Light snow likely after midnight. Little or no accumulation. Low around 30. Northwest wind 15 to 20 mph. Chance of precipitation 60 percent.

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Friday Night
 Partly cloudy. Low in the lower 20s. Northwest wind 15 to 20 mph.

Saturday
 Partly cloudy. Not as cool with high in the upper 40s. Southwest wind 10 to 15 mph.

Saturday Night
 Mostly cloudy and not as cool. Low in the lower 30s.

Sunday
 Partly cloudy and very windy. High around 40. Temperature steady or slowly falling in the afternoon.

Sunday Night
 Partly cloudy and brisk. Much colder. Low around 15.

Monday
 Mostly sunny. Cooler with high around 30.

Scott G. Ainsworth et al: "Only One Out of Five Archived Web Pages Existed as Presented"

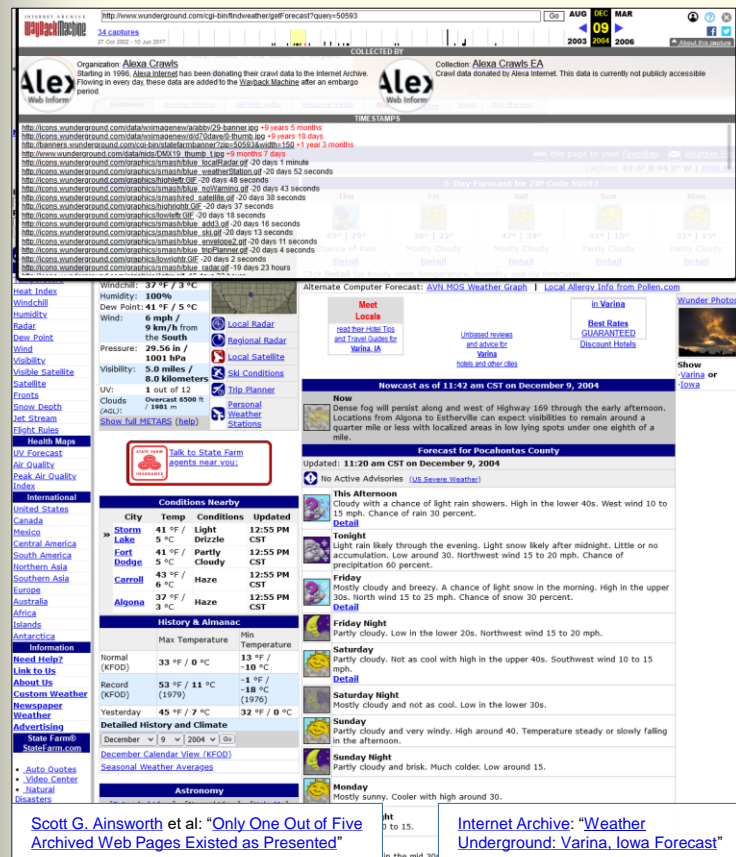
Internet Archive: "Weather Underground: Varina, Iowa Forecast"



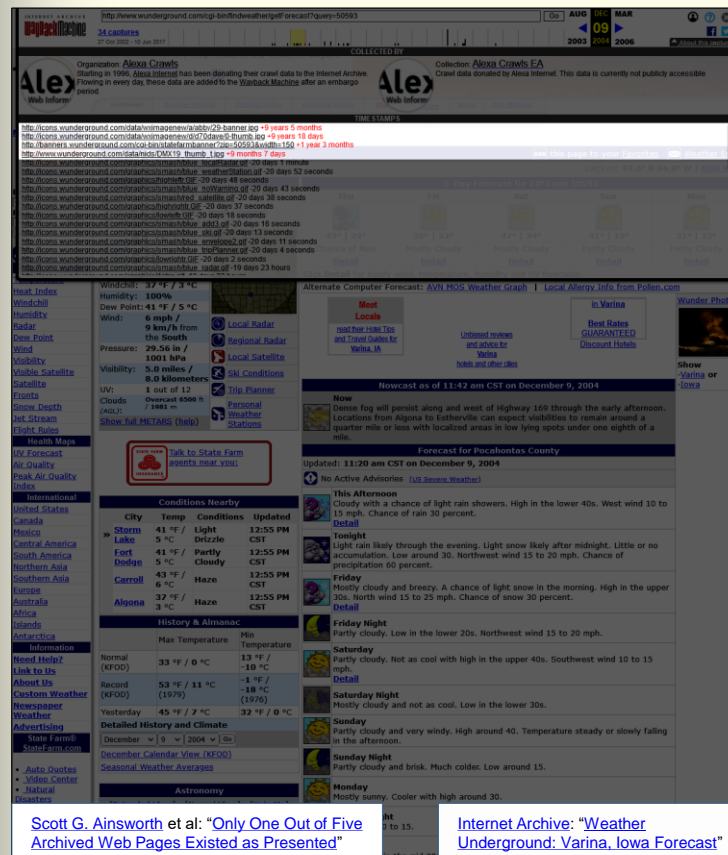
#AALL22

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Temporal (in)coherence



Wayback Machine
http://www.weatherground.com/cgi-bin/forecast/forecast.cgi?query=5053
24 captures
27 Oct 2001 - 12 Dec 2007

Organization: Alex's Web Info
Collection: Alex's Web Info
Created data donated by Alex's Web Info. This data is currently not publicly accessible.

Time Stamp: 12 Dec 2004 11:42 AM CST

Nowcast as of 11:42 am CST on December 9, 2004

Forecast for Pocahontas County

Updated: 11:20 am CST on December 9, 2004

No Active Advisories (Use Severe Weather)

This Afternoon
Cloudy with a chance of light rain showers. High in the lower 40s. West wind 10 to 15 mph. Chance of rain 30 percent.

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Sunday
Partly cloudy and very windy. High around 40. Temperature steady or slowly falling in the afternoon.

Sunday Night
Partly cloudy and brisk. Much colder. Low around 15.

Monday
Mostly sunny. Cooler with high around 30.

Conditions Hourly

City	Temp	Conditions	Updated
Storm Lake	41 °F	Light	12:55 PM CST
Lake Park	5 °C	Drizzle	12:55 PM CST
Fairfax	41 °F	Partly	12:55 PM CST
Dodge	5 °C	Cloudy	12:55 PM CST
Carroll	43 °F	Haze	12:55 PM CST
Algona	37 °F	Haze	12:55 PM CST

History & Almanac

Max Temperature	Min Temperature
Normal (KF00)	33 °F / 0 °C
Record (KF00)	53 °F / 11 °C (1976)
Yesterday	45 °F / 7 °C
32 °F / 0 °C	

Detailed History and Climate

December 9, 2004

December Calendar View (KF00)

Seasonal Weather Averages

Astronomy

State Farm
State Farm.com

Auto Quotes
Video Center
Natural Disasters

Scott G. Ainsworth et al: "Only One Out of Five Archived Web Pages Existed as Presented"

Internet Archive: "Weather Underground: Varina, Iowa Forecast"



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Temporal (in)coherence

The screenshot shows the Weather Underground website for Varina, Iowa. The page includes a search bar, a sidebar with navigation links, and a main content area with current conditions, a 5-day forecast, and a detailed hourly forecast.

Current Conditions
 Updated: 12:55 PM CST on December 09, 2004
 Observed at Storm Lake, Iowa (History)
 Elevation: 1486 ft / 453 m

5-Day Forecast for ZIP Code 50593

Thu	Fri	Sat	Sun	Mon
43° / 20° Chance of Rain	36° / 22° Mostly Cloudy	47° / 34° Mostly Cloudy	41° / 15° Partly Cloudy	31° / 15° Partly Cloudy

Hourly Forecast for Pechonhas County
 Updated: 11:20 am CST on December 9, 2004
 No Active Advisories (Use Severe Weather)

This Afternoon
 Cloudy with a chance of light rain showers. High in the lower 40s. West wind 10 to 15 mph. Chance of rain 30 percent.

Tonight
 Light rain likely through the evening. Light snow likely after midnight. Little or no accumulation. Low around 30. Northwest wind 15 to 20 mph. Chance of precipitation 60 percent.

Friday
 Mostly cloudy and breezy. A chance of light snow in the morning. High in the upper 30s. North wind 15 to 20 mph. Chance of snow 30 percent.

Friday Night
 Partly cloudy. Low in the lower 20s. Northwest wind 15 to 20 mph.

Saturday
 Partly cloudy. Not as cool with high in the upper 40s. Southwest wind 10 to 15 mph.

Saturday Night
 Mostly cloudy and not as cool. Low in the lower 30s.

Sunday
 Partly cloudy and very windy. High around 40. Temperature steady or slowly falling in the afternoon.

Sunday Night
 Partly cloudy and brisk. Much colder. Low around 15.

Monday
 Mostly sunny. Cooler with high around 30.

Scott G. Ainsworth et al: "Only One Out of Five Archived Web Pages Existed as Presented"

Internet Archive: "Weather Underground: Varina, Iowa Forecast"



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Temporal (in)coherence

Webpage was captured on 9 December 2004 at 1:09p CST.

The screenshot shows the Weather Underground website for Varina, Iowa. The page includes a search bar, a sidebar with navigation links, and a main content area with current conditions, a 5-day forecast, and a detailed hourly forecast. A text overlay indicates the page was captured on 9 December 2004 at 1:09p CST.

Varina, Iowa
Local Time: 1:09 PM CST Sat Dec 9, 2004

Current Conditions
Updated: 12:55 PM CST on December 09, 2004
Observed at Storm Lake, Iowa (History)
Elevation: 1486 ft / 453 m

5 °C
Light Drizzle

5-Day Forecast for ZIP Code 50593

Thu	Fri	Sat	Sun	Mon
43° 20° Chance of Rain	36° 22° Mostly Cloudy	57° 34° Mostly Cloudy	41° 15° Partly Cloudy	31° 15° Partly Cloudy

Hourly Forecast for Pechonhas County
Updated: 11:20 am CST on December 9, 2004

12:00 PM
Cloudy with a chance of light rain showers. High in the lower 40s. West wind 10 to 15 mph. Chance of rain 30 percent.

3:00 PM
Light rain likely through the evening. Light snow likely after midnight. Little or no accumulation. Low around 30. Northwest wind 15 to 20 mph. Chance of precipitation 60 percent.

6:00 PM
Mostly cloudy and breezy. A chance of light snow in the morning. High in the upper 30s. North wind 15 to 20 mph. Chance of snow 30 percent.

9:00 PM
Partly cloudy. Low in the lower 20s. Northwest wind 15 to 20 mph.

12:00 AM
Partly cloudy. Not as cool with high in the upper 40s. Southwest wind 10 to 15 mph.

3:00 AM
Mostly cloudy and not as cool. Low in the lower 30s.

6:00 AM
Partly cloudy and very windy. High around 40. Temperature steady or slowly falling in the afternoon.

9:00 AM
Partly cloudy and brisk. Much colder. Low around 15.

12:00 PM
Mostly sunny. Cooler with high around 30.

Conditions Hourly

City	Temp	Conditions	Updated
Storm Lake	41 °F	Light Drizzle	12:55 PM CST
Fort Dodge	41 °F	Partly Cloudy	12:55 PM CST
Carroll	43 °F	Haze	12:55 PM CST
Algona	37 °F	Haze	12:55 PM CST

History & Almanac

Max Temperature	Min Temperature
Normal (KF00)	33 °F / 0 °C
Record (KF00)	53 °F / 11 °C (1979)
Yesterday	45 °F / 7 °C
Record	32 °F / 0 °C

Detailed History and Climate

December 9, 2004

December Calendar View (KF00)

Seasonal Weather Averages

Astronomy

Auto Quotes
Video Center
Natural Quizzes

Scott G. Ainsworth et al: "Only One Out of Five Archived Web Pages Existed as Presented"

Internet Archive: "Weather Underground: Varina, Iowa Forecast"



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Temporal (in)coherence

Webpage was captured on
9 December 2004 at 1:09p CST.

Timestamp in text on webpage corroborates time
of capture (i.e., 9 December 2004 at 1:09p CST).

Scott G. Ainsworth et al: "Only One Out of Five
Archived Web Pages Existed as Presented"

Internet Archive: "Weather
Underground: Varina, Iowa Forecast"

The screenshot shows the Weather Underground website for Varina, Iowa. The page includes a search bar, a sidebar with navigation links, and a main content area with current conditions, a forecast, and a table of historical weather data. The timestamp '9 December 2004 at 1:09p CST' is visible in the top right corner.

City	Temp	Conditions	Updated
Storm Lake	41 °F	Light Drizzle	12:55 PM CST
Lake Park	5 °C	Drizzle	12:55 PM CST
Fort Dodge	41 °F	Partly Cloudy	12:55 PM CST
Dodge	5 °C	Cloudy	12:55 PM CST
Carroll	43 °F	Haze	12:55 PM CST
Algona	43 °F	Haze	12:55 PM CST
Albia	37 °F	Haze	12:55 PM CST



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Temporal (in)coherence

Webpage was captured on 9 December 2004 at 1:09p CST.

Timestamp in text on webpage corroborates time of capture (i.e., 9 December 2004 at 1:09p CST).

Text on webpage and associated infographic indicate current conditions as raining. Infographic captured on 12 December 2004 at 8:54a CST.

Scott G. Ainsworth et al: "Only One Out of Five Archived Web Pages Existed as Presented"

Internet Archive: "Weather Underground: Varina, Iowa Forecast"



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Temporal (in)coherence

Webpage was captured on 9 December 2004 at 1:09p CST.

Timestamp in text on webpage corroborates time of capture (i.e., 9 December 2004 at 1:09p CST).

Radar graphic reflects weather conditions (clear) at the time of its capture: 12 September 2005 at 5:34p CDT.

Text on webpage and associated infographic indicate current conditions as raining. Infographic captured on 12 December 2004 at 8:54a CST.

Webpage was captured on 9 December 2004 at 1:09p CST.

Timestamp in text on webpage corroborates time of capture (i.e., 9 December 2004 at 1:09p CST).

Radar graphic reflects weather conditions (clear) at the time of its capture: 12 September 2005 at 5:34p CDT.

Scott G. Ainsworth et al: "Only One Out of Five Archived Web Pages Existed as Presented"

Internet Archive: "Weather Underground: Varina, Iowa Forecast"



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What conclusions does this page support?

http://www.weatherground.com/cgi-bin/findweather.cgi?forecast?query=50593

Wayback Machine

Find the weather for any City, State or ZIP Code, or Airport Code or Country

Member Benefits: No Ads, Weather Email \$3 a year, Signup Here

Email: tyilm@gmail.com, Password: [blank], Login

Print This Page

Maps: Temperature, Heat Index, Windchill, Humidity, Radar, Dew Point, Wind, Visibility, Visible Satellite, Satellites, Fronts, Snow Depth, Jet Stream, Flight Rules

Health Maps: UV Forecast, Air Quality, Peak Air Quality Index

International: United States, Canada, Mexico, Central America, South America, Northern Asia, Southern Asia, Europe, Australia, Africa, Islands, Antarctica

Information: Need Help?, Link to Us, About Us, Custom Weather Newspaper, Weather Advertising, State Farm, Rate4am.com

Auto Quotes

Varina, Iowa

Local Time: 1:09 PM CST Set My Timezone

Current Conditions: Updated: 12:55 PM CST on December 09, 2004. Observed at Storm Lake, Iowa (History). Elevation: 1486 ft / 453 m. 41°F / 5°C. Light Drizzle. Windchill: 37°F / 3°C. Humidity: 100%. Dew Point: 41°F / 5°C. Wind: 6 mph / 9 km/h from the South. Pressure: 29.56 in / 1001 hPa. Visibility: 5.0 miles / 8.0 kilometers. UV: 1 out of 12. Clouds: Overcast 500 ft / 1581 m. Show full METARs (help).

Local Radar, Regional Radar, Local Satellite, Ski Conditions, Trip Planner, Personal Weather Stations

5-Day Forecast for ZIP Code 50593

Thu	Fri	Sat	Sun	Mon
43° 29°	36° 22°	47° 34°	41° 15°	31° 15°
Chance of Rain	Mostly Cloudy	Mostly Cloudy	Partly Cloudy	Partly Cloudy
Detail	Detail	Detail	Detail	Detail

Click Detail for hourly wind, temperature, humidity and UV forecasts.

Alternate Computer Forecast: [AVH MSGS Weather Graph](#) | [Local Allergy Info from Pollen.com](#)

Hot Locals: [read their state tips and advice for Varina, IA](#)

Unusual events and advice for Varina, IA and other sites

Best Rates GUARANTEED Discount Hotels

Nowcast as of 11:42 am CST on December 9, 2004

Now: Dense fog will persist along and west of Highway 169 through the early afternoon. Locations from Algona to Estherville can expect visibilities to remain around a quarter mile or less with localized areas in low lying spots under one eighth of a mile.

Forecast for Pocahontas County

Updated: 11:20 am CST on December 9, 2004

No Active Advisories ([Go Back to Weather](#))

This Afternoon: Cloudy with a chance of light rain showers. High in the lower 40s. West wind 10 to 15 mph. Chance of rain 30 percent.

Tonight: Light rain likely through the evening. Light snow likely after midnight. Little or no accumulation. Low around 20. Northwest wind 15 to 20 mph. Chance of precipitation 60 percent.

Friday: Mostly cloudy and breezy. A chance of light snow in the morning. High in the upper 30s. North wind 15 to 25 mph. Chance of snow 30 percent.

Friday Night: Partly cloudy. Low in the lower 20s. Northwest wind 15 to 20 mph.

Saturday: Partly cloudy. Not as cool with high in the upper 40s. Southwest wind 10 to 15 mph.

Saturday Night: Mostly cloudy and not as cool. Low in the lower 30s.

Sunday: Partly cloudy and very windy. High around 40. Temperature steady or slowly falling in the afternoon.

Sunday Night: Partly cloudy and brisk. Much colder. Low around 15.

Conditions Nearby

City	Temp	Conditions	Updated
Skarn	41°F / 5°C	Light Drizzle	12:55 PM CST
East Dodge	41°F / 5°C	Partly Cloudy	12:55 PM CST
Carroll	43°F / 6°C	Haze	12:55 PM CST
Algona	37°F / 3°C	Haze	12:55 PM CST

History & Almanac

	Max Temperature	Min Temperature
Normal (KFOD)	33°F / 0°C	13°F / -10°C
Record (KFOD) (1979)	53°F / 11°C	-1°F / -18°C
Yesterday	45°F / 7°C	32°F / 0°C

Detailed History and Climate

December | 9 | 2004 | Go

December Calendar View (KFOD)

Seasonal Weather Averages

Scott G. Ainsworth et al: "Only One Out of Five Archived Web Pages Existed as Presented"

Internet Archive: "Weather Underground: Varina, Iowa Forecast"



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What conclusions does this page support?

1. it was raining in Varina, Iowa at 12:55p CST on 9 December 2004
2. the sky was clear in Varina, Iowa at 12:55p CST on 9 December 2004
3. no definitive conclusions are supported, because different parts of the page suggest inconsistent weather conditions
4. the question is moot, since an observant judge or opposing party will highlight the page's unreliability, resulting in it being deemed inadmissible
5. IAWM evidence is inherently unreliable, due to issues of temporal incoherence



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What conclusions does this page support?

- **it was raining in Varina, Iowa at 12:55p CST on 9 December 2004**
- supporting text (i.e., “Light Drizzle”) is in webpage HTML
- rain infographic is displaced in time, but file name (i.e., “rain.GIF”) still indicates rain
- content presentation is consistent w/ IAWM behavior
- temporally violative image can be qualified + discounted



[“11NOV2015 Following The Storm”](#) by [Carl Wycoff](#) under [CC BY 2.0](#)

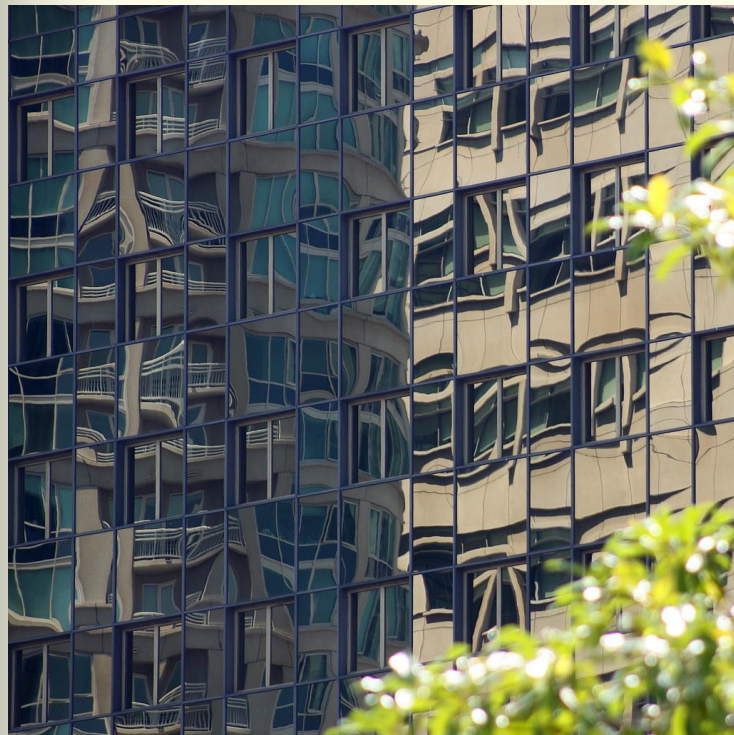


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What's going on here?

- archiving of web resources is time-staggered
- IAWM reconstitutes archived webpage w/ most temporally proximate elements
- IAWM may therefore re-present fictitious web pages
- examine capture dates + assess materiality of temporal incoherence



["chaos"](#) by [jenny downing](#) under [CC BY 2.0](#)

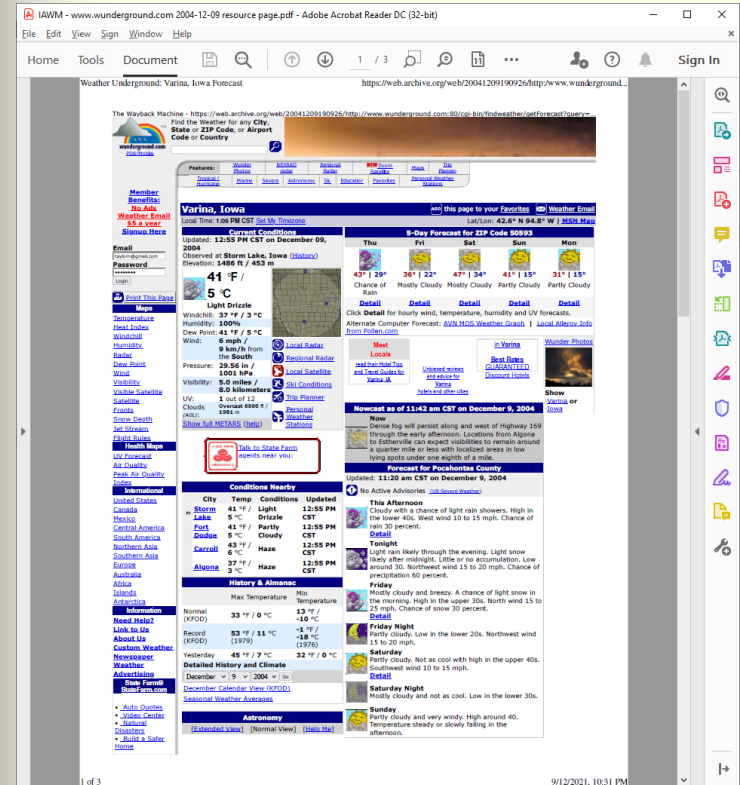


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Problems w/ PDF

- IAWM evidence submitted as PDF screenshots
- temporal variations no longer apparent
- if temporal coherence is an issue, provide supplementary info



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Problems w/ PDF

- IA will still provide an affidavit
- however, this IAWM evidence is more easily contested
- or viewed as less credible by judge
- consider an expert witness



["Door Ajar"](#) by [Jenn Turner](#) under [CC BY 2.0](#)



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The path forks...

As the story reaches a turning point, the speaking figure again quiets. The screen at the front of the room abruptly changes once more. You feel a sense of déjà vu...



["You are here:"](#) by [Paul Thompson](#) under [CC BY-ND 2.0](#)

questions



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Questions?

*The speaking figures
evidently conclude their
soliloquies. The image on
the screen is still. You
reflect on your journey,
wondering what they
meant when they said...*



"Big blue bear looking in" by [Tim Wilson](#) under [CC BY 2.0](#)

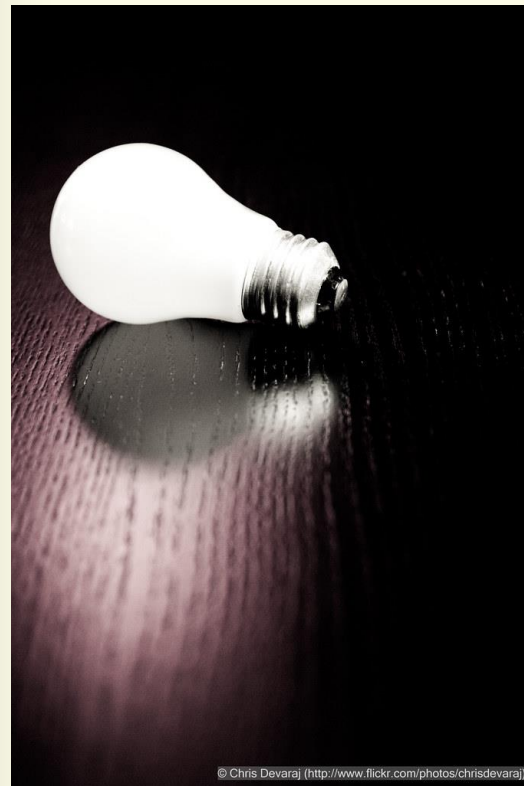


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Parting...

*The figures give their
thanks, bid you farewell.
You rise to your feet and
go forth, confident in
newfound knowledge...*



© Chris Devaraj (<http://www.flickr.com/photos/chrisdevaraj>)

"IMG_1039" by [Chris Devaraj](#) under [CC BY 2.0](#)



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