

Charles H. Townes Papers
A Finding Aid to the Collection in the Library of Congress



Manuscript Division, Library of Congress
Washington, D.C.
2021

Contact information: <http://hdl.loc.gov/loc.mss/mss.contact>

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Additional search options available at: <https://hdl.loc.gov/loc.mss/eadmss.ms015019>

Prepared by Manuscript Division staff

Finding aid encoded by Library of Congress Manuscript Division, 2019
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Collection Summary

Title: Charles H. Townes Papers

Inclusive Dates: 1898-2014

Bulk Dates: 1950-2010

ID No.: MSS84413

Creator: Townes, Charles H.

Extent: 129,250 items

Extent: 468 containers plus 2 classified and 4 oversize

Extent: 187.2 linear feet

Extent: 1 microfilm reel

Extent: 98 digital files (6.38GB)

Language: Collection material in English

Location: Manuscript Division, Library of Congress, Washington, D.C.

LC Catalog record: <https://lccn.loc.gov/mm99084413>

Summary: Physicist, astrophysicist, and educator. Correspondence, computation notebooks, technical memoranda and notes, patents, teaching files, astronomical observations, grants and projects, subject files, legal files, speeches, writings, biographical material, awards, printed matter, photographs, digital files, microfilm, and other papers relating to Townes's career beginning in 1948.

Selected Search Terms

The following terms have been used to index the description of this collection in the LC Catalog. They are grouped by name of person or organization, by subject or location, and by occupation and listed alphabetically.

People

Abella, Isaac D., 1934- --Correspondence.

Basov, N. G. (Nikolaï Gennadievich), 1922-2001--Correspondence.

Basov, N. G. (Nikolaï Gennadievich), 1922-2001.

Boyd, Robert W., 1948- --Correspondence.

Chiao, Raymond Y.--Correspondence.

Danchi, William Clifford--Correspondence.

Dicke, Robert H. (Robert Henry)--Correspondence.

Genzel, Reinhard, 1952- --Correspondence.

Greyber, Howard D., 1923- --Correspondence.

Javan, Ali, 1926-2016--Correspondence.

Letokhov, V. S.--Correspondence.

Ottusch, John J.--Correspondence.

Prokhorov, A. M. (Aleksandr Mikhaïlovich), 1916-2002--Correspondence.

Prokhorov, A. M. (Aleksandr Mikhaïlovich), 1916-2002.

Rosenfeld, Arthur H., 1926-2017--Correspondence.

Rydbeck, O. E. H. (Olof Erik Hans), 1911- --Correspondence.

Schawlow, Arthur L., 1921-1999--Correspondence.

Scully, Marlan O. (Marlan Orvil), 1939- --Correspondence.

Shimoda, Kōichi--Correspondence.

Shockley, William, 1910-1989--Correspondence.

Stroschio, Michael A., 1949- --Correspondence.

Townes, Charles H.

Townes, Charles H. How the laser happened : adventures of a scientist. 1999.

Wang, Tien-Chuan--Correspondence.

Wollman, Eric Robert, 1947- --Correspondence.

Organizations

Columbia University.

Committee on Scholarly Communication with the People's Republic of China (U.S.)

Hubble Space Telescope (Spacecraft)
Institute for Defense Analyses.
JASON Defense Advisory Group.
Laser History Project.
Massachusetts Institute of Technology.
National Academy of Sciences (U.S.)
National Science Foundation (U.S.)
Perkin-Elmer Corporation.
Research Corporation.
United States. Army Research Office.
United States. National Aeronautics and Space Administration.
United States. National Aeronautics and Space Administration. Science and Technology Advisory Committee for Manned Space Flight.
United States. Office of Naval Research.
University of California, Berkeley.
University of California, Berkeley. Quantum Electronics and Astrophysics Group.

Subjects

Aeronautics.
Astronomy--Observations.
Astronomy--Research--China.
Astronomy.
Astrophysics--Research.
Astrophysics--Study and teaching.
Astrophysics.
Electromagnetic waves--Patents.
Interferometry.
Lasers--Patents.
Lasers.
Manned space flight--United States.
Masers--Patents.
Masers.
Microwave spectroscopy.
Nobel Prizes.
Nuclear physics.
Optics.
Physics--Awards.
Physics--Research.
Physics--Study and teaching.
Physics.
Quantum electronics.
Quantum theory.
Religion and science.
Religion--Awards.
Science and state--United States.
Science--International cooperation.
Space telescopes--United States.
Technology and state--United States.
Templeton Foundation Prize.

Places

United States--Defenses.
United States--Military policy.

Occupations

Astrophysicists.
Educators.
Physicists.

Acquisition Information

The papers of Charles H. Townes were given to the Library of Congress by Townes in 1999. Numerous additions were given by him between 2000 and 2009. Further additions were received in 2014 and 2015.

Processing History

Part I of the papers of Charles H. Townes was arranged and described in 2012 by Melinda K. Friend with the assistance of Tracey R. Barton and Maria Farmer. The finding aid was revised in 2015. Additional material received in 2014 and 2015 was processed as Part II in 2019 by Melinda K. Friend and the finding aid revised and updated. The finding aid was further revised by Melinda K. Friend in 2021.

Digital files were received as part of the papers of Charles H. Townes on a variety of storage media, each of which was assigned a unique digital ID number. Use the digital ID number to request access copies of the files associated with each media. A description of the standard processes taken on all born digital records can be found in the Processing History Note: Born Digital Collection Material at <https://www.hdl.loc.gov/loc.mss/eadmss.digital>.

Transfers

Audiotapes, videotapes, and sound discs have been transferred to the Library's Motion Picture, Broadcasting, and Recorded Sound Division where they are identified as part of the Charles H. Townes Papers.

Other Repositories

Other papers of Charles H. Townes are located in the Bancroft Library of the University of California, Berkeley, California.

Copyright Status

Copyright in the unpublished writings of Charles H. Townes in these papers and in other collections of papers in the custody of the Library of Congress has been dedicated to the public.

Access and Restrictions

The papers of Charles H. Townes are open to research. Researchers are advised to contact the Manuscript Reading Room prior to visiting. Many collections are stored off-site and advance notice is needed to retrieve these items for research use.

National Security Classified Information

Government regulations control the use of national security classified items in this collection. Manuscript Division staff can furnish information concerning access to and use of classified material.

Technical Requirements

Digital files in the papers of Charles H. Townes include text files in .pdf, .html, .doc, and unidentified formats, moving image files in .vob format, and images files in .jpg format. No special tools or software are required to view the content.

Microfilm

Microfilm on one reel was received as part of the papers of Charles H. Townes in 2014 and is listed in the finding aid. The contents of the microfilm is two volumes of computation notebooks. This microfilm is not available for interlibrary loan.

Preferred Citation

Researchers wishing to cite this collection should include the following information: Container, reel, or digital ID number, Charles H. Townes Papers, Manuscript Division, Library of Congress, Washington, D.C.

Biographical Note

Date	Event
1915, July 28	Born, Greenville, S.C.
1935	B.A., modern languages, and B.S., physics, Furman University, Greenville, S.C.
1937	M.A., physics, Duke University, Durham, N.C.
1939	Ph.D., physics, California Institute of Technology, Pasadena, Calif.
1939-1947	Technical staff, Bell Telephone Laboratories, New Jersey, including design and development of radar bombing and navigation systems for Allied bombers
1941	Married Frances Hildreth Brown
1948-1961	Professor, Columbia University, New York, N.Y.; associate professor of physics, 1948-1950; appointed professor of physics, 1950; executive director, Columbia Radiation Laboratory, 1950-1952; chairman, Physics Department, 1952-1955; on sabbatical in Europe and Japan, 1955-1956; on leave as vice president and director of research to the Institute for Defense Analyses, 1959-1961
1953	Successfully tested first practical maser (microwave amplification by stimulated emission of radiation) device
1955	Published with Arthur L. Schawlow, <i>Microwave Spectroscopy</i> . New York: McGraw-Hill
1955-1956	Guggenheim fellow and Fulbright lecturer, University of Paris, Paris, France, and University of Tokyo, Tokyo, Japan
1958	Introduced with Arthur L. Schawlow, concept of the optical maser (laser)
1959	Awarded Patent No. 2,879,439 for production of electromagnetic energy (basic maser patent)
1959-1961	Vice president and director of research, Institute for Defense Analyses, Washington, D.C.
1959-1969	Consultant, President's Scientific Advisory Committee; member, 1966-1969
1960	Awarded with Arthur L. Schawlow, Patent No. 2,929,922 for maser and maser communication systems (basic laser patent)
1961-1966	Provost and professor of physics, Massachusetts Institute of Technology, Cambridge, Mass.
1963	Scott lecturer, University of Toronto, Toronto, Canada
1964	Awarded Nobel Prize in Physics with N. G. Basov and A. M. Prokhorov for contributions to fundamental work in quantum electronics leading to the development of the maser and laser
1964-1970	Chairman, Science and Technology Advisory Committee for Manned Space Flight, National Aeronautics and Space Administration
1966-1985	Member, Board of Directors, Perkin-Elmer Corp.
1967	President, American Physical Society
1967-2014	Professor, University of California, Berkeley, Calif.; professor of physics, 1967-1986; professor emeritus of physics, 1986-1994; professor in the graduate school, 1994-2014
1973-1986	Director, General Motors Corp.
1976-1977	Member, President's Advisory Committee on Science and Technology
1995	Published <i>Making Waves</i> . Woodbury, N.Y.: American Institute of Physics

1999	Published <i>How the Laser Happened: Adventures of a Scientist</i> . New York: Oxford University Press
2002	Awarded inaugural Trotter Prize, Texas A&M University, College Station, Tex.
2005	Awarded Templeton Foundation Prize for contributions to the understanding of religion
2012	Awarded inaugural Golden Goose Award in recognition of the unexpected impact of his study of molecular and atomic spectroscopy
2015, Jan. 27	Died, Oakland, Calif.

Scope and Content Note

The papers of Charles Hard Townes (1915-2015) span the years 1898-2014, with the bulk of the items concentrated between 1950 and 2010. The collection consists of two parts. Part I comprises the bulk of the collection and documents Townes's career as a physicist, astrophysicist, and educator primarily from 1948 to 2000. Part II covers Townes's career in physics and astrophysics at the University of California, Berkeley, California, primarily from 2000 to 2010. Further descriptions of each part follow.

Part I

Part I of the papers spans the years 1898-2009, with the bulk of the material dating from 1948 to 2000. The papers are organized into the following series: [General Correspondence](#), [Personal File](#), [Alphabetical File](#), [Academic File](#), [Grants and Projects](#), [Patent and Litigation File](#), [Speech and Engagement File](#), [Writings](#), [Photographs and Slides](#), [Classified](#), [Oversize](#), and [Digital Files](#).

The [General Correspondence](#) is comprised mostly of a chronological file of letters spanning the years 1978-2002 and probably maintained as a central file. Crank mail sometimes referred to as "special letters" by Townes dates from 1962 to 1998. Further correspondence resides in the [Personal File](#) and the [Alphabetical File](#).

The [Personal File](#) contains mostly correspondence, interviews, awards, and biographical information. Correspondence includes letters of advice to students, letters of recommendation, and personal and family letters. Interviews conducted by organizations, including the Laser History Project, chronicle Townes's development of the maser and the laser. An awards file kept by Townes begins with his 1964 receipt of the Nobel Prize, but information for that event is sparse. Other underrepresented or nonexistent years include 1971-1975, 1981-1982, and 1984-2004. A large amount of material covers his win of the Templeton Prize in 2005. A list of awards and honors, bio-bibliographies prepared for the University of California, a chronological file, and background forms for publications provides biographical information.

The [Alphabetical File](#) contains the largest amount of material and covers Townes's membership in and leadership of various academic, scientific, and governmental organizations. In 1959 Townes began work for the Institute for Defense Analyses in Washington, D.C., a nonprofit agency organized to assist the United States government with technical advice. Growing out of the institute and founded in 1960 was the JASON Defense Advisory Group, a part-time defense think tank for university professors that evaluated national issues involving science and technology. Townes continued with the group through the 1990s. Material for the institute and the JASON Defense Advisory Group includes correspondence, contract agreements, reports, studies, and printed matter. For the National Academy of Sciences, Townes served on the Committee on Scholarly Communications with the People's Republic of China. Documentation for this committee includes meeting minutes, correspondence, reports, and an account by Townes of visits to Chinese astronomical centers in 1977. At the National Aeronautics and Space Administration, Townes began serving as chairman of the Science and Technology Advisory Committee for Manned Space Flight in 1964 and later sat on the review panels for the Hubble Space Telescope. Further information on the Hubble Space Telescope is located in files pertaining to the Perkin-Elmer Corporation. Material relating to his work at the National Aeronautics and Space Administration includes meeting minutes, correspondence and memoranda, testimony before Congress, reports, studies, blueprints, and printed matter. Of note are the appointments of Townes through the years to various presidential science and technology committees.

The [Alphabetical File](#) also contains a large amount of correspondence. Correspondents include Isaac D. Abella, N. G. Basov, Raymond Y. Chiao, William Clifford Danchi, Robert H. Dicke, Reinhard Genzel, Howard D. Greyber, Ali Javan, V. S. Letokhov, John J. Ottusch, A. M. Prokhorov, O. E. H. Rydbeck, Arthur L. Schawlow, William Shockley, Kōichi Shimoda, Tien-Chuan Wang, and Eric Robert Wollman.

The [Academic File](#) includes Townes's notebooks and memoranda along with material relating to the physics courses and graduate students he taught over the years. His computation notebooks cover the years 1948-1994, with the notebook dated from July 1, 1957 to May 1, 1965, containing the invention of the optical maser or laser. Townes's memoranda and notes on interferometry written alone and with associates cover the years 1982-1989, his technical memoranda date from 1979 to 1999, and seven volumes of personal notebooks on physics are undated. Teaching physics at American universities and abroad, his courses covered quantum electronics and mechanics, optics, nuclear physics, and astrophysics. He worked closely with graduate students, some of whose computation notebooks, writings and publications, correspondence, and experiments are among the files. Townes also served as the faculty sponsor for the Quantum Electronics and Astrophysics Group, a research unit operating under the University of California at Berkeley that employed postdoctoral fellows and visiting scholars from the United States and abroad to work on grant-funded projects. Agencies that funded projects include the National Aeronautics and Space Administration and the Office of Naval Research. Related grant files are located in [Grants and Projects](#).

The [Grants and Projects](#) series is comprised of files on grant-funded projects carried out by Townes, his colleagues, and graduate students at the University of California at Berkeley. Material includes applications, contracts, correspondence, proposals, budgets, and reports. Agencies that funded projects include the Army Research Office, National Aeronautics and Space Administration, Office of Naval Research, and the University of California Committee on Research. The projects include developing equipment for astronomical observations.

The [Patent and Litigation File](#) documents legal cases involving maser and laser patents. The largest amount of material concerns Patent Number 2,879,439 on the production of electromagnetic energy. Townes assigned the maser patent to the Research Corporation whose attorney, Harold Stowell, handled their legal matters. Material related to this period includes the original patent and correspondence with Stowell and Stowell Law Offices. By 1970, Dana M. Raymond represented the Research Corporation. His original files, designated with the R34 prefix, contain investigatory material from the case *Gould v. Schawlow* and material from the two patent infringement cases he pursued, *Research Corporation v. Spectra-Physics* and *Research Corporation v. Coherent Radiation*. The correspondence with the Research Corporation also relates to the maser patent and to infringement cases. Raymond's files probably became part of this collection after their use along with those of Townes for the Laser History Project. In 1966, Gordon Gould challenged Patent Number 2,929,922, the laser patent held by Townes and Arthur L. Schawlow, in the case *Gould v. Schawlow*. Townes and Schawlow prevailed. Of interest is a chronological file on Gould chronicling his decades of patent litigation. Inquiries about the maser and the laser as well as their history are located in [Writings](#).

The [Speech and Engagement File](#) covers Townes's career from 1948 to 2008 with some gaps in the latter years. The miscellaneous speeches filed at the end of each year contain Townes's handwritten drafts while many of the printed versions are among the numbered works in [Writings](#). Events attended by Townes are also found in the [Alphabetical File](#) usually listed under the name of an organization.

The papers are rounded out by a [Writings](#) series comprised mostly of articles, books, and printed speeches, and a [Photographs and Slides](#) series. The photographs relate to events attended by Townes and his childhood while the slides are of images used in the classroom or for publications. A [Classified](#) file contains correspondence, minutes, and an article related to atmospheric absorption and the Institute of Radio Engineers. [Oversize](#) items consist of blueprints, photographs, a broadside, and card file index.

Part II

Part II of the papers spans the years 1921-2014, with the bulk of the material dating from 2000 to 2010. The papers are organized into the following ten series: [General Correspondence](#), [Personal File](#), [Alphabetical File](#), [Academic File](#), [Grants and Projects](#), [Speech and Engagement File](#), [Writings](#), [Classified](#), [Oversize](#), and [Digital Files](#).

The [General Correspondence](#) continues the chronological file begun in Part I and covers the years 2003-2010. Further correspondence resides in the [Personal File](#) and [Alphabetical File](#).

The [Personal File](#) contains mostly awards, interviews, and biographical information, with some overlap with Part I. The awards file includes some new material related to the 1964 Nobel Prize in Physics that Townes shared with N. G. Basov and A. M. Prokhorov, including a scrapbook of clippings, but mostly covers the years 2000-2010. The interviews largely pertain to the invention of the laser, especially those conducted in 2010 during the laser's fiftieth anniversary, but also relate to the coexistence of religion and science. Some interviews also are located in the numbered file in [Writings](#).

The [Alphabetical File](#) continues to chronicle Townes's involvement with academic, scientific, and governmental organizations while highlighting the number of awards, lectures, and science facilities named for him. The [Alphabetical File](#) also contains correspondence files. Correspondents include N. G. Basov, Robert W. Boyd, Arthur H. Rosenfeld, Arthur L. Schawlow, Kōichi Shimoda, Marlon O. Scully, and Michael Stroschio. Also of interest are subject files compiled by Townes on masers and lasers and science and religion.

The [Academic File](#) includes a 1949 computation notebook Townes kept during his tenure at Columbia University in New York, New York, lists of students Townes supervised from 1953 to 2007, and a list of theses written by his students. The [Grants and Projects](#) series is comprised of files on grant-funded projects carried out by Townes, his colleagues, and graduate students at the University of California, Berkeley, with some overlap with Part I. Agencies that funded projects include the National Aeronautics and Space Administration, National Science Foundation, and Office of Naval Research.

The [Speech and Engagement File](#) overlaps some of the years covered in Part I, but extends through 2013. The miscellaneous speeches filed at the end of each year contain Townes's handwritten drafts while many of the printed versions are among the numbered works in [Writings](#). Events Townes attended also are found in the [Alphabetical File](#) usually listed under the name of the organization, and in the [Personal File](#) under awards.

The [Writings](#) contain both works by Townes and by others, with the majority of the works by Townes located in the numbered file. Though the index for the numbered file in Part II provides a complete listing of all of the works enumerated by Townes from 0 to 489, it does not include material in the collection for every number. Part II mostly covers numbers 300-489, and overlaps with numbers found in Part I. *How the Laser Happened: Adventures of a Scientist* is listed under the heading of books in Part I, but in Part II Townes placed material related to that title under number 301. It should also be noted that some folders only contain correspondence and drafts related to a title and not the final product.

A [Classified](#) file contains a charter for the JASON Defense Advisory Group. The [Oversize](#) series consists of posters and a blueprint. The [Digital Files](#) consist of audiovisual and text files relating to Townes's speeches and engagements and text files of draft chapters of his book *How the Laser Happened: Adventures of a Scientist*.

Arrangement of the Papers

This collection is arranged into two parts and twenty-two series:

Part I:

- [General Correspondence, 1962-2002](#)
- [Personal File, 1948-2005](#)
- [Alphabetical File, 1929-2006](#)
- [Academic File, 1946-1999](#)
- [Grants and Projects, 1966-1998](#)
- [Patent and Litigation File, 1898-1994](#)
- [Speech and Engagement File, 1948-2008](#)
- [Writings, 1924-2000](#)
- [Photographs and Slides, circa 1917-2009](#)
- [Classified, 1950-1952](#)
- [Oversize, 1971-2008](#)
- [Digital Files](#)

Part II:

- [General Correspondence, 2003-2010](#)
- [Personal File, 1959-2014](#)
- [Alphabetical File, 1948-2014](#)
- [Academic File, 1948-2007](#)
- [Grants and Projects, 1971-2009](#)
- [Speech and Engagement File, 1961-2013](#)
- [Writings, 1921-2011](#)
- [Classified, 2002](#)
- [Oversize, 1982-2010](#)

- Digital Files, 1995-2008

Description of Series

Container	Series
BOX 1-21	<p><u>Part I: General Correspondence, 1962-2002</u></p> <p>Incoming and outgoing correspondence, including attachments, between Townes and family, friends, colleagues, organizations, and the public relating to personal and professional activities.</p> <p>Arranged in chronological and crank mail files.</p>
BOX 22-38	<p><u>Part I: Personal File, 1948-2005</u></p> <p>Correspondence, including letters of advice to students, letters of recommendation, and personal and family letters, biographical information, interviews, awards, appointment calendars, and lists of appointments to organizations and committees.</p> <p>Arranged alphabetically by topic or type of material.</p>
BOX 39-259	<p><u>Part I: Alphabetical File, 1929-2006</u></p> <p>Correspondence, memoranda, reports, minutes, consulting contracts, speeches, writings, drafts and notes, photographs, blueprints, printed matter, and financial records.</p> <p>Arranged in three files and therein alphabetically by name of person, organization, or topic, roughly following the groupings established by Townes. A Columbia University file closely follows Townes's tenure at that institution from 1948 to 1961. Files titled Set A and Set B largely begin with Townes's move to the Massachusetts Institute of Technology in 1961 and continue through his years with the University of California at Berkeley. Overlapping years, organizations, topics, and persons are common among the three, but especially between Set A and Set B. Miscellaneous correspondence is interspersed within each letter of the alphabet under Columbia University and filed at the end of each letter in Set A and Set B.</p>
BOX 260-296	<p><u>Part I: Academic File, 1946-1999</u></p> <p>Computation notebooks, technical memoranda, notebooks on physics, grade books, course and seminar files, student experiments, published and unpublished writings, drafts and notes, abstracts, correspondence, calculations, diagrams, illustrations, photographs, subject files, grant and project files, budgets, reports, printed matter, and microfilm.</p> <p>Arranged alphabetically by topic or type of material.</p>
BOX 297-312	<p><u>Part I: Grants and Projects, 1966-1998</u></p> <p>Applications, proposals, contracts, budgets, correspondence, notes, reports, and financial records.</p> <p>Arranged alphabetically by name of organization and therein by project number.</p>
BOX 313-338	<p><u>Part I: Patent and Litigation File, 1898-1994</u></p> <p>Correspondence and memoranda, patent applications and patents, attorney files, briefs, depositions, drafts, exhibits, interrogatories, notes, opinions, pleadings, and printed matter.</p> <p>Arranged into files of legal cases and patents and therein alphabetically by name of person, organization, or case name, or by type of material. Files beginning with the R34 prefix originally belonged to Dana M. Raymond.</p>
BOX 338-355	<p><u>Part I: Speech and Engagement File, 1948-2008</u></p> <p>Correspondence, schedules, speeches, drafts, photographs, broadsides, and printed matter.</p> <p>Arranged chronologically by date of event with miscellaneous speeches filed at the end of each year.</p>

- BOX 355-402** **Part I: Writings, 1924-2000**
 Correspondence, articles, books, dissertation, thesis, speeches, drafts, page proofs, notes, calculations, contracts, background information, illustrations, photographs, and printed matter.
 Arranged into writings by Townes and a miscellaneous file and therein alphabetically by type of material and title of work with the numbered works largely arranged by Townes in chronological order.
- BOX 403-408** **Part I: Photographs and Slides, circa 1917-2009**
 Photographs, broadsides, photocopies, slides, and indexes.
 Arranged as received from Townes.
- BOX CL 1** **Part I: Classified, 1950-1952**
 Correspondence, minutes, and an article.
 Arranged and described according to the series, containers, and folders from which the items were removed.
- BOX OV 1-OV 3** **Part I: Oversize, 1971-2008**
 Blueprints, photographs, a broadside, and an index.
 Arranged and described according to the series, containers, and folders from which the items were removed.
- DF** **Part I: Digital Files**
 A 3/4" machine-readable tape, labeled "MF115131," found with the paper files during the course of processing is currently inaccessible and unprocessed.
- BOX 409-415** **Part II: General Correspondence, 2003-2010**
 Chronological file of incoming and outgoing correspondence, including attachments, between Townes and friends, colleagues, organizations, and the public relating to personal and professional activities. The correspondence is usually stamped "mailed."
 Arranged in chronological order.
- BOX 415-420** **Part II: Personal File, 1959-2014**
 Awards, interviews, biographical information, family papers, genealogy, and photographs.
 Arranged alphabetically by topic, name of person, or type of material.
- BOX 420-440** **Part II: Alphabetical File, 1948-2014**
 Correspondence, memoranda, reports, minutes, speeches, writings, drafts and notes, photographs, and printed matter, with the correspondence usually stamped as "file copy."
 Arranged alphabetically by name of person, organization, or topic and therein in reverse chronological order. Miscellaneous correspondence is filed at the end of each letter of the alphabet.
- BOX 441-442** **Part II: Academic File, 1948-2007**
 Computation notebook, course files, lists of theses and graduate students, photographs, and printed matter.
 Arranged alphabetically by type of material.
- BOX 442-446** **Part II: Grants and Projects, 1971-2009**
 Applications, proposals, contracts, budgets, correspondence, notes, reports, and financial records.

Arranged alphabetically by name of organization and therein by project number.

BOX 446-457

Part II: Speech and Engagement File, 1961-2013

Correspondence, schedules, speeches, drafts, photographs, posters, photocopies of transparencies, and printed matter.

Arranged chronologically by date of event with miscellaneous speeches filed at the end of each year, with some years only represented by miscellaneous speeches.

BOX 457-468

Part II: Writings, 1921-2011

Correspondence, articles, books, speeches, interviews, lectures, editorials, drafts, notes, calculations, contracts, background information, illustrations, photographs, and printed matter.

Arranged into writings by Townes and by others and therein alphabetically by type of material and title of work with the numbered works largely arranged by Townes in chronological order.

BOX CL 2

Part II: Classified, 2002

Charter.

Arranged and described according to the series, container, and folder from which the item was removed.

BOX OV 4

Part II: Oversize, 1982-2010

Posters and a blueprint.

Arranged and described according to the series, containers, and folders from which the items were removed.

DF

Part II: Digital Files, 1995-2008

Text files and audiovisual files relating to Townes's speeches and engagements and text files of draft chapters of his book *How the Laser Happened: Adventures of a Scientist*.

Arranged and described according to the series, containers, and folders from which the items were removed.

Container List

Container	Contents
BOX 1-21	Part I: General Correspondence, 1962-2002 Incoming and outgoing correspondence, including attachments, between Townes and family, friends, colleagues, organizations, and the public relating to personal and professional activities. Arranged in chronological and crank mail files.
BOX 1	Chronological 1978-1979 (7 folders) 1980 (1 folder)
BOX 2	(2 folders) 1981 (7 folders) 1982 (1 folder)
BOX 3	(4 folders) 1983 (4 folders) 1984 (1 folder)
BOX 4	(5 folders) 1985 (4 folders)
BOX 5	(1 folder) 1986 (7 folders) 1987 (1 folder)
BOX 6	(11 folders)
BOX 7	1988 (11 folders)
BOX 8	(1 folder) 1989 (11 folders)
BOX 9	(1 folder) 1990 (8 folders) 1991 (2 folders)
BOX 10	(4 folders) 1992 (7 folders)
BOX 11	(1 folder)

Part I: General Correspondence, 1962-2002

Container	Contents
	1993-1994 (9 folders)
	1995 (1 folder)
BOX 12	(3 folders)
	1996 (4 folders)
	1997 (3 folders)
BOX 13	(1 folder)
	1998 (7 folders)
	1999 (2 folders)
BOX 14	(5 folders)
	2000 (7 folders)
BOX 15	(8 folders)
	2001 (2 folders)
BOX 16	(11 folders)
BOX 17	2002 (11 folders)
BOX 18	(2 folders)
	Crank mail
	1962-1973 (9 folders)
	1974 (1 folder)
BOX 19	(1 folder)
	1975-1984 (10 folders)
	1985 (1 folder)
BOX 20	(1 folder)
	1986-1992 (9 folders)
BOX 21	1993-1998 (7 folders)
BOX 22-38	Part I: Personal File, 1948-2005 Correspondence, including letters of advice to students, letters of recommendation, and personal and family letters, biographical information, interviews, awards, appointment calendars, and lists of appointments to organizations and committees. Arranged alphabetically by topic or type of material.
BOX 22	Appointment calendars, 1996-2005 (2 folders) Appointments

Part I: Personal File, 1948-2005

Container	Contents
	California University, Berkeley, Calif., 1967-1968 Consultant, 1982-1983
BOX 23	Massachusetts Institute of Technology, Cambridge, Mass., provost and resignation, 1961, 1966 Awards 1964-1969 (20 folders) 1970 (1 folder)
BOX 24	(3 folders) 1971-1978 (9 folders) 1979 (1 folder)
BOX 25	(2 folders) 1980-1986 (7 folders)
BOX 26	1992 2005 (10 folders)
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Arranged in three files and therein alphabetically by name of person, organization, or topic, roughly following the groupings established by Townes. A Columbia University file closely follows Townes's tenure at that institution from 1948 to 1961. Files titled Set A and Set B largely begin with Townes's move to the Massachusetts Institute of Technology in 1961 and continue through his years with the University of California at Berkeley. Overlapping years, organizations, topics, and persons are common among the three, but especially between Set A and Set B. Miscellaneous correspondence is interspersed within each letter of the alphabet under Columbia University and filed at the end of each letter in Set A and Set B.

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BOX 467	Nos. 474-481, 483-484, 489 (11 folders)
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BOX 467	Chiao, Raymond Y., ed.
BOX 467	<i>Amazing Light: A Volume Dedicated to Charles Hard Townes on his 80th Birthday</i> , 1996
BOX 467	<i>Visions of Discovery: New Light on Physics, Cosmology, and Consciousness</i> , dedicated to Townes for his ninetieth birthday
BOX 467	2005-2008 (4 folders)

Part II: Writings, 1921-2011

Container	Contents
BOX 468	2009-2010 (3 folders)
BOX 468	"Scarce and valuable papers"
BOX 468	List, undated
BOX 468	Casimir, H. G. B., 1936
BOX 468	Everett, Hugh, III, 1957
BOX 468	Herzberg, G., and L. L. Howe, circa 1960
BOX 468	Michaelson, A. A., 1921, 1927
BOX 468	Miscellany, 1925
BOX 468	Purcell, Edward, 1960
BOX 468	Van Vleck, J. H., 1942
BOX 468	Weber, J., 1953
BOX 468	Wesson, L. G., 1947
BOX 468	Wichmann, Eyvind, and Norman M. Kroll, 1956
BOX CL 2	Part II: Classified, 2002 Charter. Arranged and described according to the series, container, and folder from which the item was removed.
BOX CL 2	Alphabetical File
BOX CL 2	Institute for Defense Analyses, Washington, D.C., JASON Defense Advisory Group, 2000-2002
BOX CL 2	JASON Defense Advisory Group charter attached to email of 30 July 2002 (Container 428)
BOX OV 4	Part II: Oversize, 1982-2010 Posters and a blueprint. Arranged and described according to the series, containers, and folders from which the items were removed. Alphabetical File Masers and lasers History and the future, 2010
BOX OV 4	Posters of timelines (Container 431) Grants and Projects Office of Naval Research N00014-82-C-0700, infrared spatial interferometer Proposals, budgets, and awards, 1982 Folder 1 of 3
BOX OV 4	Blueprint of 60-inch infrared telescope attached to approval form (Container 444)
DF	Part II: Digital Files, 1995-2008 Text files and audiovisual files relating to Townes's speeches and engagements and text files of draft chapters of his book <i>How the Laser Happened: Adventures of a Scientist</i> . Arranged and described according to the series, containers, and folders from which the items were removed. Speech and Engagement File

Part II: Digital Files, 1995-2008

Container

Contents

2005-2006

2006, Apr. 18

Max Planck Research Group, Visiting Committee meeting, Erlangen, Germany, scientific report reprints (Container 453)

Digital ID: mss84413_174_002

2007

2007, May 22

"The Laser: Origin, Development and Future." Optical Society of Northern California, Palo Alto Research Center, Palo Alto, Calif. (Container 453)

Digital ID: mss84413_174_003

2008

2008, Sept. 10

"Science in My Life, and the Unpredictability of Discovery," talk given to SETI, location unknown (Container 454)

Digital ID: mss84413_174_004

2008, Oct. 31

Dedication of Charles H. Townes Center for Science, Furman University, Greenville, S.C. (Container 455)

Digital ID: mss84413_174_001

Writings

By Townes

Numbered

No. 301, *How the Laser Happened: Adventures of a Scientist*

Chapters 1-8, partial drafts, 1995 (Container 461)

Digital ID: mss84413_174_006

Digital ID: mss84413_174_007