

Data Exploration on Astronomy Topics

Data Source from Seattle Public Library

MAT 259 Assignment 1 by Yulei Yuan



About My Presentation

My topic of interest is what are the popular things about Astronomy reflected on the related item types in the library. The related medias are in the Dewey Class between 520 and 530, which contains various subtopics like Chronology, Celestial mechanics, specific celestial bodies, etc. I will first explore what's popular in different item types. The next step is to see the top-viewed works within a specific "sub-Dewey" Class (525), and the last exploration is the popularity of a classical book on cosmology over time -- *A Brief History of Time*.

What is popular overall?

Query from spl_2016.outraw for all check-outs of medias from Dewey class 520-530

```
SELECT
  bibNumber,
  itemType,
  title,
  COUNT(bibNumber) AS Counts
FROM
  spl_2016.outraw
WHERE
  deweyClass >= 520 AND deweyClass < 530
GROUP BY bibNumber , itemType , title
ORDER BY Counts DESC
LIMIT 10
```

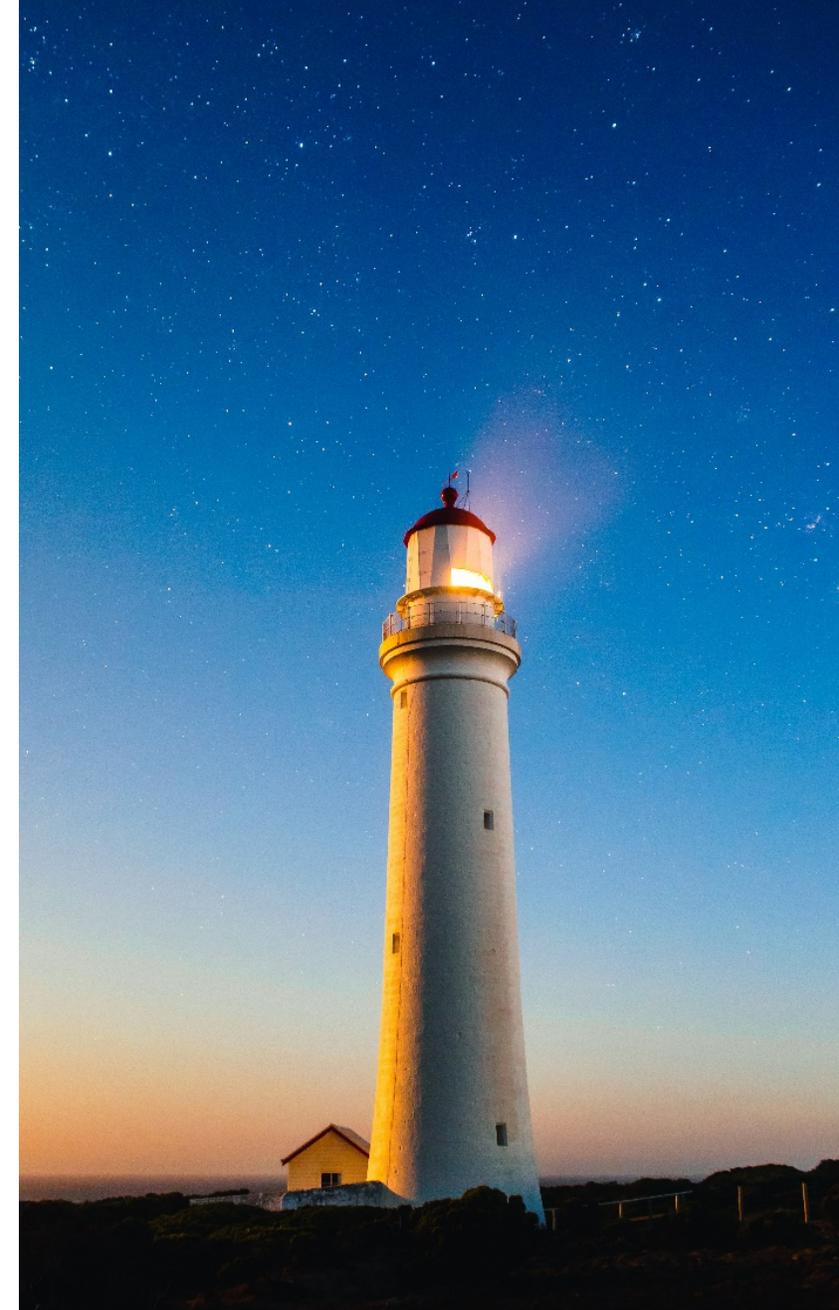
bibNumber	itemType	title	Counts
560307	jcbk	magic school bus lost in the solar system	1403
2506302	jcbk	planets	1317
3244170	acbkc	Astrophysics for people in a hurry	1292
2795658	jcbk	Theres no place like space	1290
2496892	acdvd	universe The complete season one explore the edges of the unknown	1289
2711090	acdvd	Hubble	1191
2588824	acdvd	universe The complete season three explore the edges of the unknown	1176
2532732	acdvd	universe The complete season two explore the edges of the unknown	1123
1898443	acbkc	brief history of time	1096
2490092	jcdvd	Eyewitness Planets	1087

- Here are top ten medias ordered by check-out counts of all time period.
- Among all the popular medias, there are famous documentaries (universe : The complete season one explore the edges of the unknown) , educational books (Planets) and photobook for visual guidance of the universe (Eyewitness Planets).

```
SELECT
  YEAR(cout) AS years,
  bibNumber, itemType, title, COUNT(bibNumber) AS Counts
FROM
  spl_2016.outraw
WHERE
  deweyClass >= 520 AND deweyClass < 530 AND itemType = 'acbk'
GROUP BY bibNumber , itemType , title, YEAR(cout)
ORDER BY Counts DESC
LIMIT 20;
```

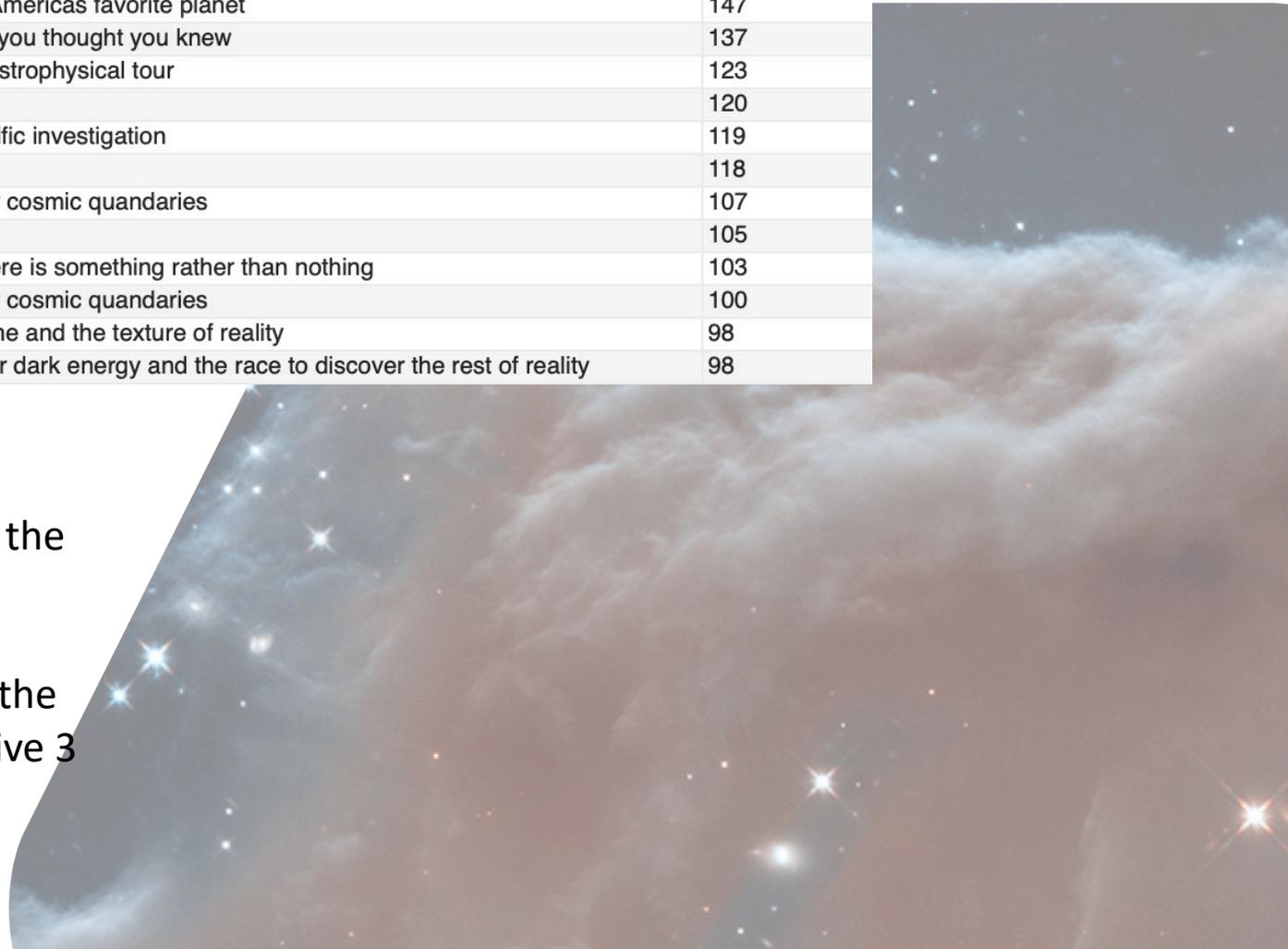
How popular are the books?

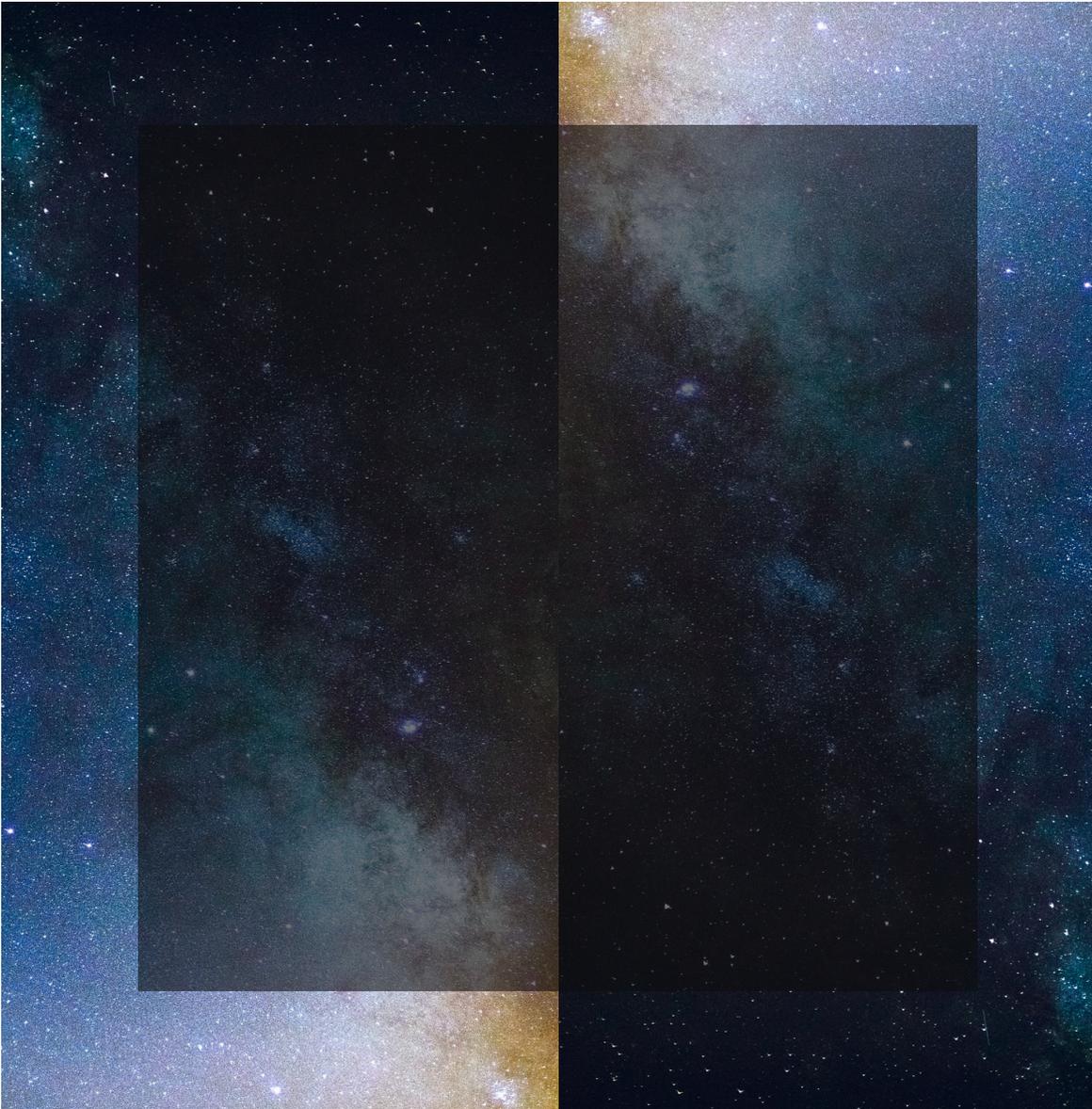
Query to find the top 20 checkouts of books from Dewey class 520-530



years	bibNumber	itemType	title	Counts
2017	3244170	acbk	Astrophysics for people in a hurry	617
2018	3244170	acbk	Astrophysics for people in a hurry	405
2019	3244170	acbk	Astrophysics for people in a hurry	262
2016	3138914	acbk	Dark matter and the dinosaurs the astounding interconnectedness of the universe	185
2015	1898443	acbk	brief history of time	175
2017	3198553	acbk	glass universe how the ladies of the Harvard Observatory took the measure of the stars	158
2012	2740043	acbk	universe from nothing why there is something rather than nothing	157
2018	1898443	acbk	brief history of time	149
2009	2559897	acbk	Pluto files the rise and fall of Americas favorite planet	147
2014	2936440	acbk	accidental universe the world you thought you knew	137
2017	3209933	acbk	Welcome to the universe an astrophysical tour	123
2014	2946213	acbk	Cosmos	120
2017	3235431	acbk	Why time flies a mostly scientific investigation	119
2019	1898443	acbk	brief history of time	118
2007	2388371	acbk	Death by black hole and other cosmic quandaries	107
2017	1898443	acbk	brief history of time	105
2013	2740043	acbk	universe from nothing why there is something rather than nothing	103
2008	2388371	acbk	Death by black hole and other cosmic quandaries	100
2008	2232387	acbk	fabric of the cosmos space time and the texture of reality	98
2011	2693002	acbk	4 percent universe dark matter dark energy and the race to discover the rest of reality	98

- *Astrophysics for people in a hurry* is a 2017 popular science book centering some basic questions about the universe.
- The popularity of this book can be clearly shown in the record for it was the most popular book for successive 3 years.





```
SELECT
  YEAR(cout) AS years,
  bibNumber, itemType, title, COUNT(bibNumber) AS Counts
FROM
  spl_2016.outraw
WHERE
  deweyClass >= 520 AND deweyClass < 530 AND itemType = 'acdvd'
GROUP BY bibNumber , itemType , title, YEAR(cout)
ORDER BY Counts DESC
LIMIT 20;
```

- Query to find the top 20 checkouts of DVDs.

years	bibNumber	itemType	title	Counts
2010	2588824	acdvd	universe The complete season three explore the edges of the unknown	332
2009	2496892	acdvd	universe The complete season one explore the edges of the unknown	314
2012	2711090	acdvd	Hubble	300
2009	2532732	acdvd	universe The complete season two explore the edges of the unknown	290
2013	2711090	acdvd	Hubble	272
2012	2735841	acdvd	Through the wormhole Season two	270
2011	2588824	acdvd	universe The complete season three explore the edges of the unknown	244
2010	2532732	acdvd	universe The complete season two explore the edges of the unknown	243
2011	2658128	acdvd	universe The complete season four explore the edges of the unknown	243
2011	2711090	acdvd	Hubble	236
2012	2737569	acdvd	fabric of the cosmos	233
2013	2832121	acdvd	universe The complete season six explore the edges of the unknown	232
2013	2735841	acdvd	Through the wormhole Season two	231
2011	2687767	acdvd	universe The complete season five explore the edges of the unknown	228
2008	2496892	acdvd	universe The complete season one explore the edges of the unknown	223
2006	2197008	acdvd	planets	218
2009	2588824	acdvd	universe The complete season three explore the edges of the unknown	212
2010	2625647	acdvd	Hubbles amazing rescue	207
2012	2713908	acdvd	Into the universe with Stephen Hawking	205
2012	2701710	acdvd	Inside the Milky Way	203



Most of the preferred DVDs are copies of documentaris about the universe.



The Universe sees to be the most popular documentary series of all time



Overall people prefer to see the universe in motion rather than reading books about it. (More counts of check-outs)

SELECT

```
    bibNumber,  
    itemType,  
    title,  
    deweyClass,  
    COUNT(bibNumber) AS Counts
```

FROM

```
spl_2016.outraw
```

WHERE

```
    title LIKE '%Earth%'  
    AND deweyClass >= 525  
    AND deweyClass < 526
```

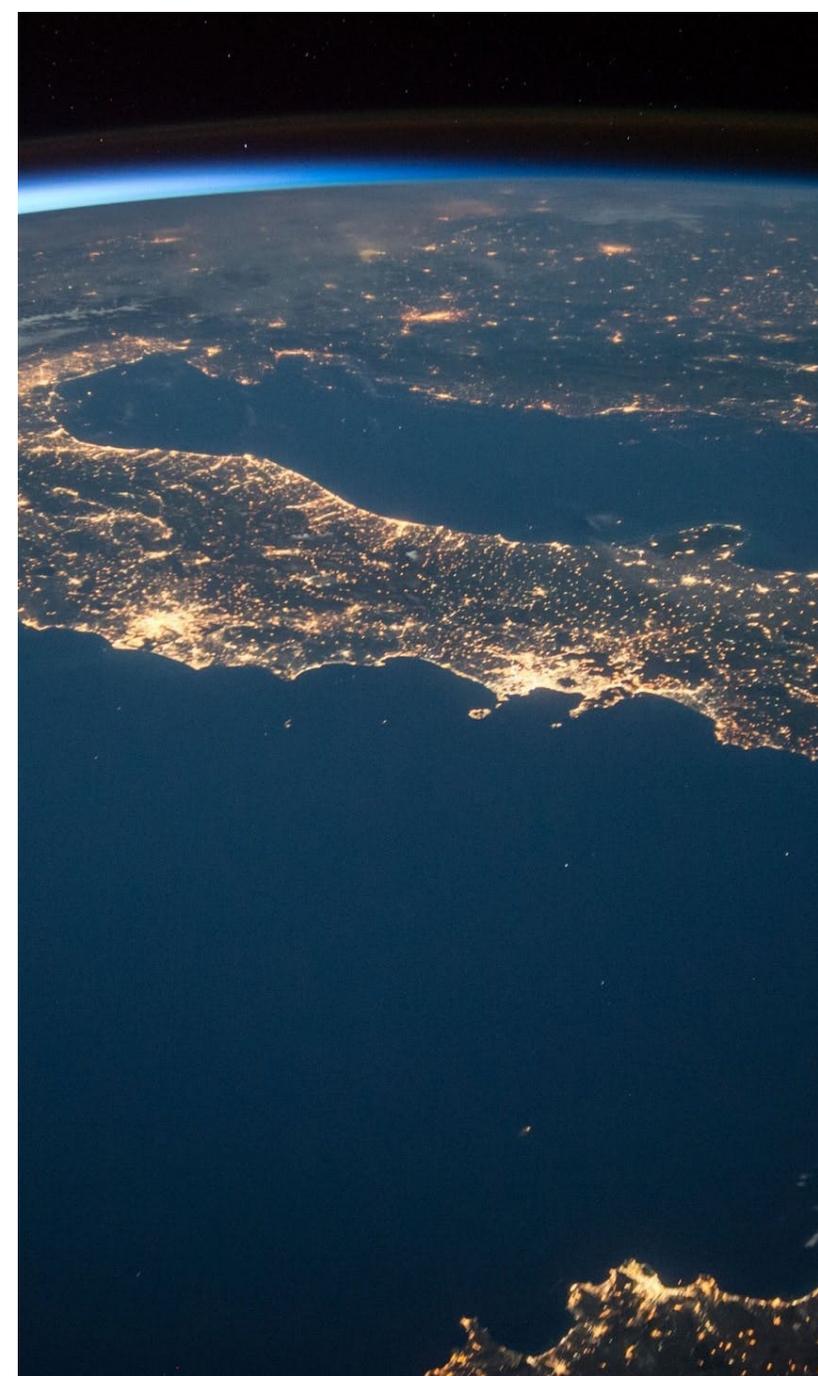
GROUP BY bibNumber , itemType , title , deweyClass

ORDER BY Counts **DESC**

limit 20

What about our home : the Earth?

Query to find the top 20 checkouts of books from Dewey class 525 : Earth



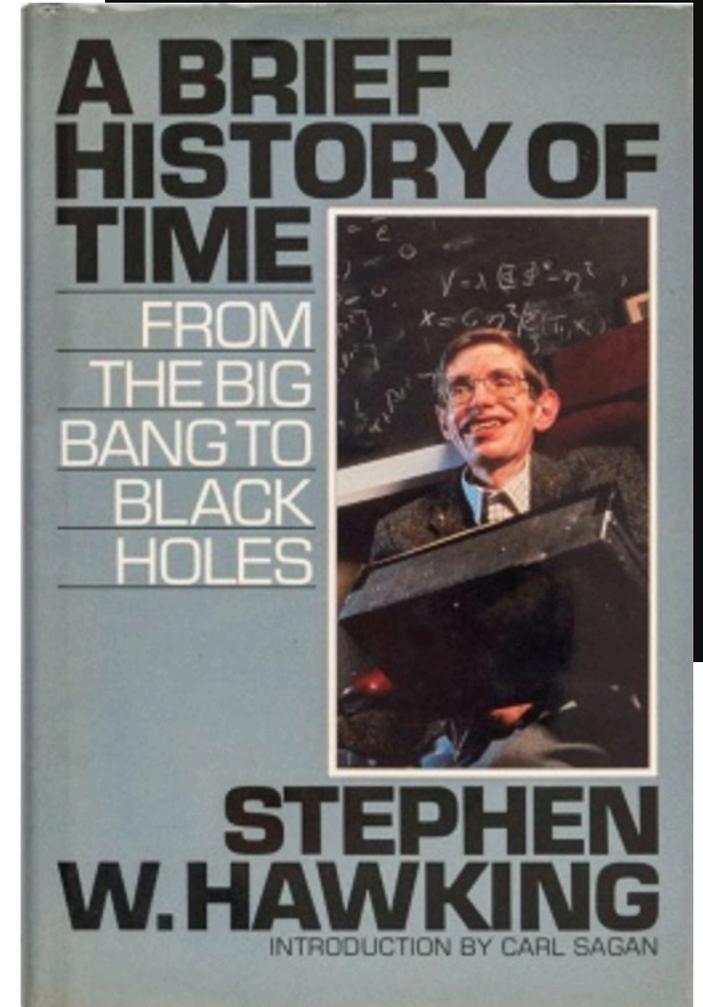
bibNumber	itemType	title	deweyClass	Counts
2305387	jcbk	On Earth	525	707
2702578	jcbk	Earth the blue planet	525	309
2468669	jcbk	Earth	525	248
2953070	jcbk	Why does Earth spin and other questions about our planet	525	199
2672839	jcbk	Come see the Earth turn the story of L'ŕon Foucault	525.36	199
3284148	jcbk	amazing planet Earth	525	150
2641521	jcbk	Earth and the moon	525	141
2152329	acbck	life and death of planet earth how the new science of astrobiology charts the ultimate fate of...	525.01	125
2205139	jcbk	Earth and the moon	525	105
2990519	jcbk	Planet Earth	525	100
2639688	acbck	What if the Earth had two moons and nine other thought provoking speculations on the solar...	525	79
3405928	jcbk	Earthrise Apollo 8 and the photo that changed the world	525.0222	76
3143928	jcbk	secrets of Earth	525	75
588315	jcbk	How we learned the earth is round	525.1	54
2512387	acbck	Flat earth the history of an infamous idea	525.1	53
387885	jcbk	Earth our planet in space	525	46
3264997	jcbk	Earth	525	44
3369134	jcbk	Earth	525	40

- Here are top medias ordered by check-out counts of all time period about our home : the Earth .
- Among all the popular item types, the photobooks are the most popular. The top three in the list are look-books for kids to build a basic concept of our planet.

How popular is “Time” over time?

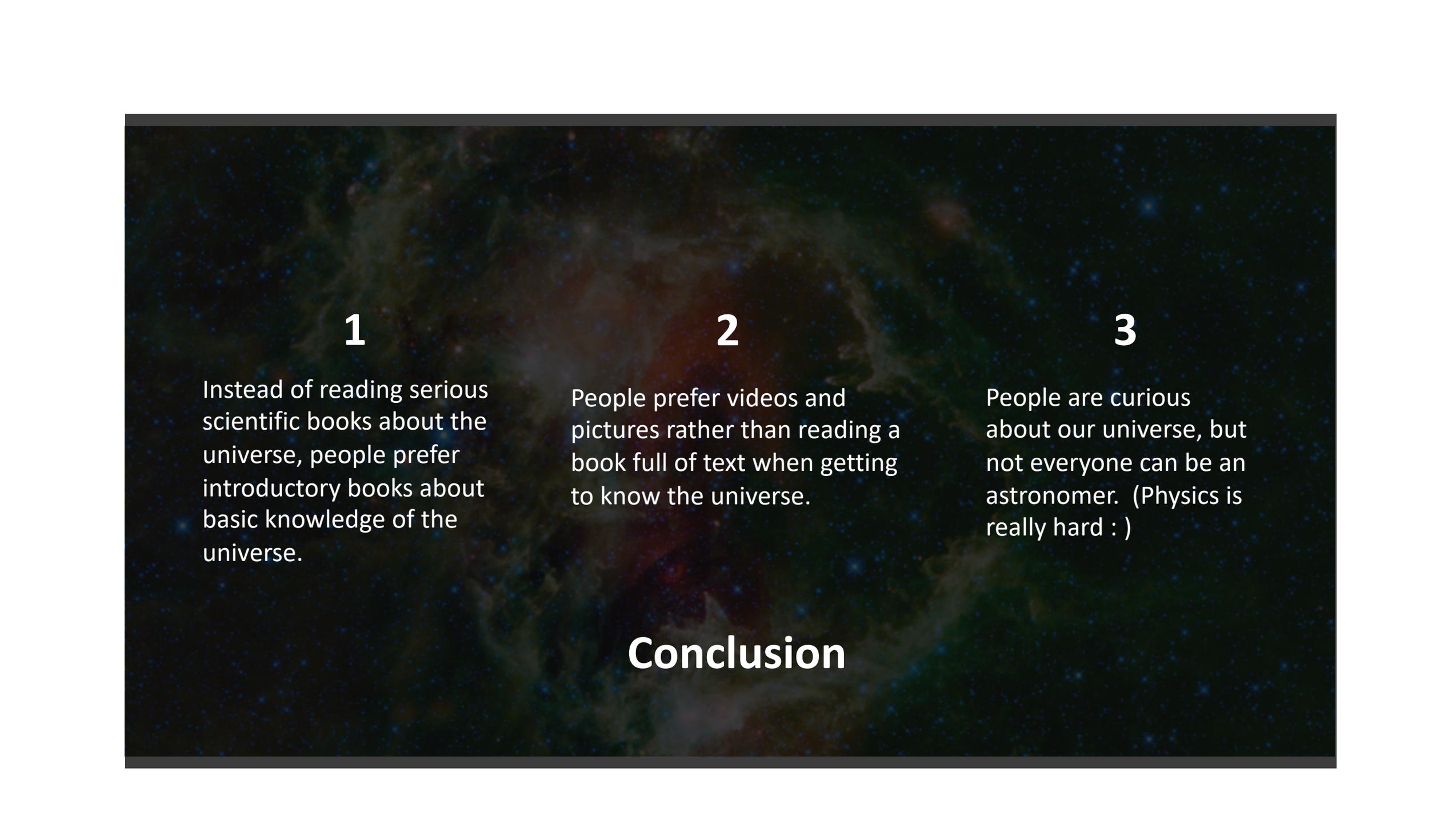
Query to find the top 20 checkouts of all time related to *Brief history of time* by Stephen Hawking.

```
SELECT
  YEAR(cout) AS years,
  bibNumber, itemType, title, COUNT(bibNumber) AS Counts
FROM
  spl_2016.outraw
WHERE
  title LIKE '%brief history of time%' AND deweyClass >= 520 AND deweyClass < 530
GROUP BY bibNumber , itemType , title, YEAR(cout)
ORDER BY Counts DESC
LIMIT 20;
```



years	bibNumber	itemType	title	Counts
2015	1898443	acbk	brief history of time	175
2018	1898443	acbk	brief history of time	149
2019	1898443	acbk	brief history of time	118
2017	1898443	acbk	brief history of time	105
2016	1898443	acbk	brief history of time	96
2014	1898443	acbk	brief history of time	67
2010	1898443	acbk	brief history of time	54
2012	1898443	acbk	brief history of time	53
2006	1898443	acbk	brief history of time	52
2011	1898443	acbk	brief history of time	50
2013	1898443	acbk	brief history of time	46
2006	1300482	acvhs	Brief history of time	46
2008	1898443	acbk	brief history of time	46
2009	1898443	acbk	brief history of time	41
2007	1898443	acbk	brief history of time	40
2015	1688824	acbk	illustrated a brief history of time	33
2014	1688824	acbk	illustrated a brief history of time	32
2007	1300482	acvhs	Brief history of time	27
2008	1688824	acbk	illustrated a brief history of time	25
2019	3383499	accd	brief history of time	25

- The book was first published at 1988. A great intro for people who are interested in astronomy with no requirement for prior knowledge.
- The result shows that the book was actually popular in the 2010's.
- “Illustrated a brief history of time” is an expanded edition of the original first version of the book.



1

Instead of reading serious scientific books about the universe, people prefer introductory books about basic knowledge of the universe.

2

People prefer videos and pictures rather than reading a book full of text when getting to know the universe.

3

People are curious about our universe, but not everyone can be an astronomer. (Physics is really hard :)

Conclusion