

Space Forensic and Application of Chemistry in Cosmic Crime

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Abstract

This study discusses the awareness of space crime among the few people, examined how chemistry applied in cosmic crime and explained about how control global warming. A soil sample was collected from agricultural land and pesticide detected from it. This experiment is the evidence of cruelty of humans towards the earth. Man activities cause for global warming. Global warming is a prominent factor of earth dying. It is clear that the man is one of the cause of the death of the earth. Earth dying is cosmic crime. It is not only that death of the Star, galaxies all are cosmic crime. From this cosmic forensic was realized. Cosmic forensic is one of the branch of space forensic. Every action of man is cause of the death of the earth. Collected evidence of crimes in outer space. So it was found that Anne McClain had committed a crime in outer space. NASA astronaut Anne McClain was accused by space criminal. From this need of the space forensic was realized. If space crimes are increased it will affect people completely. There will also be technological failures is.

Keywords: Discovery of space forensic, Pesticide analysis of paddy soil by GC-MS method, relation of pesticide uses to global warming and earth dying, explanation of cosmic crime, evidences of outer space crime in the history of science, solution for control global warming

INTRODUCTION

Space forensic is the application of scientific principles in criminal cases of outer space and cosmic crimes. Cosmic forensic is the branches of space forensic it deals about death of star, galaxies, planets etc. Recognizing current situation where commercial space travels has commenced, and space tourism is not far behind, space transportation is expected to lead to commercial mining of celestial mineral resources from the moon and asteroids as has been found technical feasible and commercially viable. Space specific products have been identified for industrial Mining, processing, and manufacturing, for which man Outer space and Celestial bodies may soon be inhabited by multi nationality, multi-ethnic and multi-cultural groupings of tourists, and not so comfortable or private living spaces, attitudinal disparity and conflicting beliefs, differences, disputes, conflicts, and crimes are sure to raise their head. Economic activity and business culture may usher in crimes of competition and spying on intellectual property space crimes through techniques like cyber, laser etc. may also permeate the space domain for ill intentioned Abuses. The criminals may be individuals or collective groups or incognito terrorists. An example of cosmic crime is the earth going to die. Man cruelty to earth will kill mother earth once. Removing hilly areas, use of pesticides in the fields and mining are all done by man to the earth. The earth is constantly dying. Who are the culprits? Yes, human beings. Moreover, human beings are also the cause of human destruction. An example of this is Endosulphan disaster in Kasargod. Law and justice must be strengthened. Similarly,

though crimes in outer space seem to be a very farfetched Thought, it is becoming a reality with the time. The first crime as seen by the world is in very recent times, where an astronaut was accused of cybercrime. When asked for clarification, it was known that no fraud was committed and the astronaut had just logged in to her bank account just to see the balance. With such events coming to light, it is a good step to discuss the challenges of forensic investigations in such circumstances.

Collection of crime scene evidence even on earth is a crucial task for investigators but when space comes in to play, the task becomes more crucial and hectic. Not every astronaut can make a good forensic expert, and similarly not every forensic astronaut can be sent to outer spaces for evidence collection. Hence, lack of collection of evidence will again be a challenging factor. Also, with very few people being sent to spaces there will usually be a very low possibility of any eyewitness too. The evidence where gravity plays its role in helping the substance adhere to surfaces tends to lose its existence. For example, any blood splash will remain as droplets in space, and hence no splash pattern will be formed and so no tracing of the crime can be possible in such events. Trace evidence are those which is exchanged between suspect and scene owing to Loebl's Principle, but these are the evidence which can play a very vital role in the decision making for the judiciary. When we talk, trace evidence in spaces, it becomes next to impossible. Debris, when found on a crime scene on earth, can be a very important observation but when we talk of space debris is common and so it will not be good evidence. Also due to lack of proper study of space particles, there is a very chance of ruling out a case on basis of just trace particles. Cybercrime or crime linked to the internet is one field where investigations are likely possible. Any communication from outer space to space agencies on earth is via internet, so the hacking of this network will lead to disclosing of vital information. Satellites are also space bodies connected to earth via internet communications. Hacking of such machinery can imply mass disaster or capture of a whole nation within hours. Investigations of such crimes will have issues majorly based on lack of knowledge, lack of instrumentation, and also lack of strict laws against such crimes.

EVIDENCE OF MAN'S CRUELTY TO EARTH

The use of pesticides is one of the cruelties that humans do to the earth. To prove it, some soil of the paddy field was dug up and pesticide analysis was done from it. The use of pesticides is one of the reasons of global warming. Global warming is a prominent factor of Earth Dying. All materials and methods are given below.

MATERIALS AND METHODS

ANALYSIS OF PESTICIDES FROM PADDY SOIL AND FIND THE REASON OF EARTH DYING DUE TO PESTICIDE USES

1] chemicals

Acetonitrile, acetone, and methanol were purchased. Formic acid, D-(+)-Gluconic acid- α -lactone, (-)-shikimic acid, 3-ethoxy 1,2-propanediol, and D-sorbitol, as analyte protectants, were purchased from Sigma-Aldrich. The tertiary distilled water was produced using a Milli-Q system.

2)rice paddy soils

The agricultural soil samples used in this study were collected from rice paddy soils located in Thandilam and Kadanchery Villages. The collected soil samples were passed through a 2mm sieve after drying in the shade, and then stored frozen at -20 degree Celsius until analysis was performed. Pesticide standard solutions were made for a mixture containing 123 and 219 pesticides for the GC-MS/and

analyses, respectively. Therefore, 342 pesticides were used to formulate a standard solution for the Multiresidue pesticide analysis

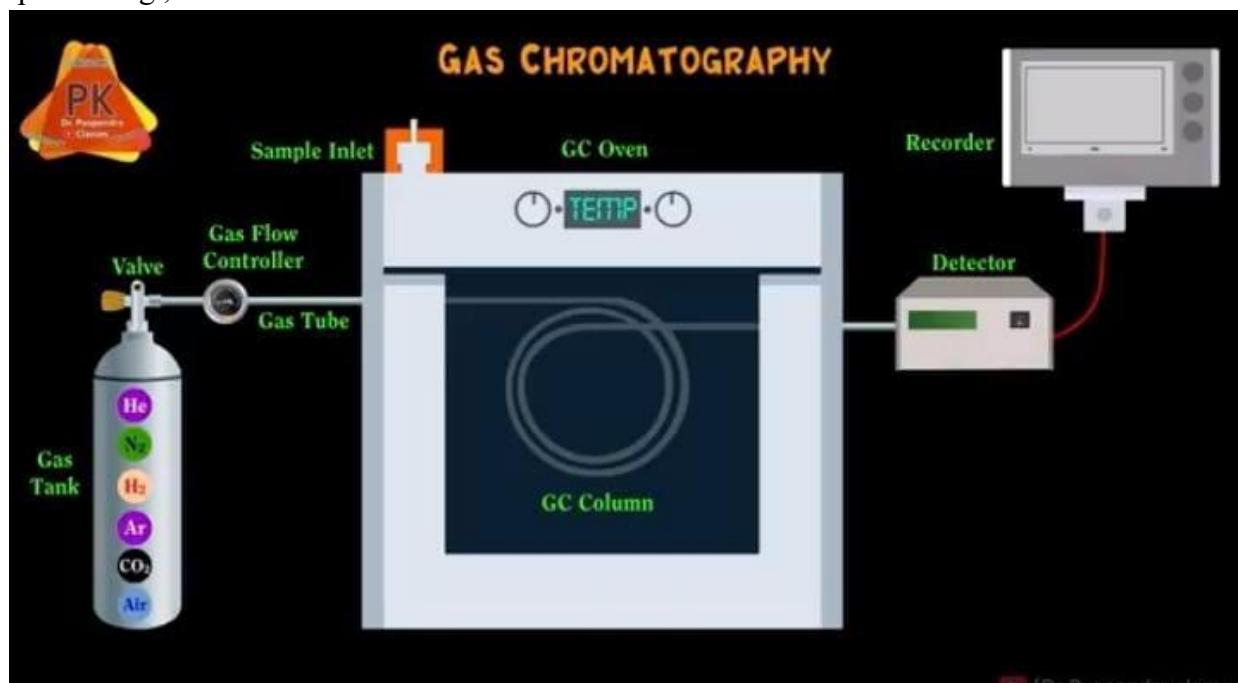
3) preparation of solution

standard pesticides used in this study were purchased. And were supplied in the liquid basis at concentrations of 1000, 500 and 100 mg/kg inverse. In a 20 mL volumetric flask, 1000, 500, 100 mg/kg inverse standard stock solutions were collected and combined. If the solvent was large during pooling, it was left to dry using Nitrogen. Finally, 20 mL of acetonitrile was added to resolve. A mixed standard solution for GC-MS preparation and mixture of standard solution S/MS and LC-MS/MS was prepared. For the preparation of untreated samples, soil for the Non detection of 342 pesticides was selected after the first screening from among the analysed samples. The untreated samples were prepared from the soil after grinding and were stored frozen at 20 degree Celsius for validation analysis.

4) Extraction

for all tested samples, five grams of the freeze dried samples were weighed and transferred into 50 mL conical tubes. The weighed sample was activated in 2 mL of distilled water for 30 min. After extraction, samples were treated with 4g anhydrous MgSO₄, 1 g NaCl, 0.5 g Na₃citrate dihydrate, 0.5 g Na₂Hcitrate Se q u il hydrate. Then samples mixed with Qu E c h ERS extraction salts were transferred to a microtube and mixed with 20ul AP and 70ul Me CN for the GC-MS analyses

The injection mode was Splitless and the injection volume was 1μL. The capillary Column was Rxi-5Sil MS. The oven temperature program was initialized at 50 degree Celsius /min. Helium was used as the carrier gas, and total Column flow was 1.0 mL/min. For the multiresidue MRM data processing, the GC-MS solution was used.



5) GC-MS /MS analysis

The GC-MS/MS analysis was conducted on a Shimadzu GCMS-TQ8040 triple quadrupole mass spectrometer coupled to a GC-2010 plus equipped with an AOC-205 autoinjector and -20i autosampler. For the mass spectrometer, the electron energy of the EI was 70 eV, and temperature values for the injection port and transfer line were 280 degree Celsius. Argon was used with an AOC-20S in the collision

inductive dissociation Gas. For the gas chromatograph ,a splitless GC glass liner with glass wool was inserted in the inlet.

❑ RESULTS AND DISCUSSION

Presence of DDT, Endosulphan has been identified . Precursor ions were determined through scan analysis of each pesticide ,and retention time(RT) was found under the provided GC analysis conditions. Product ion scan analysis was conducted at various CE value. Qualitative and quantitative ions were determined considering the sensitivity and surrounding disturbance ions or baseline . If the baseline on the chromatogram was poor or there were several interfering ions around the RT , ions were excluded from the quantitative ions, even if the signal was high ,and they were only considered only as a qualitative

Table 1. MRM conditions for the first 40 pesticides in the GC–MS/MS analysis. MRM conditions for the other 83 pesticides

Table 1. MRM conditions for the first 40 pesticides in the GC–MS/MS analysis. MRM conditions for the other 83 pesticides are listed in Table S1.

Pesticides	RT (min)	Precursor > Product Ion (CE, eV)			
		Quantifier Ion		Qualifier Ion	
Acrinathrin	13.525	181.00 > 152.10	24	208.00 > 181.10	9
Alachlor	8.572	188.00 > 160.10	9	188.00 > 131.10	21
Aldrin	9.143	263.00 > 192.90	30	263.00 > 190.90	30
Ametoctradin	13.88	246.00 > 188.20	27	246.00 > 174.10	30
Anilofos	12.748	226.00 > 157.00	15	184.00 > 157.00	9
Azaconazole	10.647	217.00 > 173.00	15	173.00 > 109.10	27
Benfuresate	8.399	163.00 > 121.10	9	256.00 > 163.10	9
BHC-alpha	7.55	181.00 > 145.00	15	219.00 > 183.00	9
BHC-beta	7.891	181.00 > 145.00	18	219.00 > 183.00	9
BHC-delta	8.226	181.00 > 145.00	15	219.00 > 183.00	9
BHC-gamma	7.891	181.00 > 145.00	15	219.00 > 183.00	12
BifenoX	12.784	341.00 > 310.00	9	310.00 > 189.00	9
Bifenthrin	12.448	166.00 > 164.10	30	181.00 > 141.10	21
Bromobutide	8.487	232.00 > 176.20	9	232.00 > 114.10	9
Bromopropylate	12.514	341.00 > 183.00	21	183.00 > 76.10	27
Butachlor	10.036	176.00 > 147.10	15	237.00 > 160.20	15
Butafenacil	14.426	331.00 > 180.00	21	331.00 > 152.10	30
Carbophenothion	11.51	342.00 > 157.10	15	342.00 > 199.10	6
Chlorantraniliprole	12.676	278.00 > 249.00	20	280.00 > 251.00	20
Chlordane-cis	9.988	377.00 > 267.90	27	377.00 > 266.00	24
Chlordane-trans	10.168	377.00 > 267.90	27	377.00 > 266.00	24
Chlorfenapyr	10.699	247.00 > 227.20	15	247.00 > 200.00	27
Chlorfenvinphos (E)	9.472	267.00 > 159.00	18	323.00 > 266.90	18
Chlorfenvinphos (Z)	9.625	267.00 > 159.00	18	323.00 > 266.90	18
Chlorfluazuron	7.291	213.00 > 171.10	9	171.00 > 127.00	15
Chlorobenzilate and chloropropylate	10.959	251.00 > 111.10	27	139.00 > 75.10	27
Chlorpropham	7.292	127.00 > 65.10	21	213.00 > 171.00	9
Chlorpyrifos-methyl	8.492	286.00 > 93.10	24	286.00 > 270.90	18
Cyfluthrin-1	14.632	163.00 > 127.00	6	226.00 > 206.10	15
Cyfluthrin-2	14.731	163.00 > 127.00	6	226.00 > 206.00	15
Cyfluthrin-3	14.786	163.00 > 127.00	6	226.00 > 206.10	15
Cyfluthrin-4	14.83	163.00 > 127.00	6	226.00 > 206.10	15

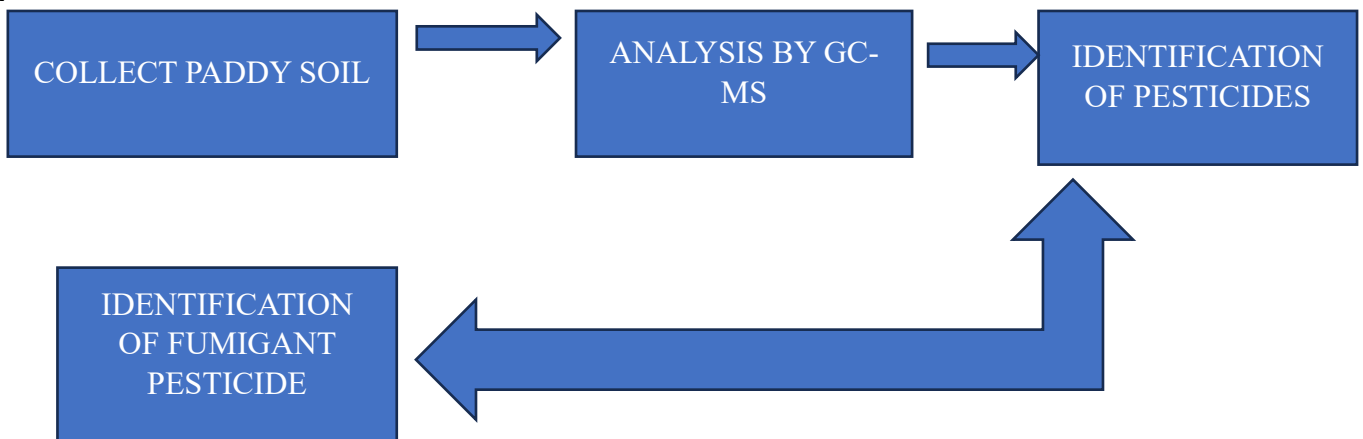
Table 1. Cont.

Pesticides	RT (min)	Precursor > Product Ion (CE, eV)			
		Quantifier Ion		Qualifier Ion	
Cyhalothrin-1	13.196	197.00 > 141.10	12	197.00 > 161.10	6
Cyhalothrin-2	13.365	197.00 > 141.10	12	197.00 > 161.10	6
Cypermethrin-1	14.938	163.00 > 127.10	9	163.00 > 109.00	24
Cypermethrin-2	15.042	163.00 > 127.10	9	163.00 > 109.00	24
Cypermethrin-3	15.092	163.00 > 127.10	9	163.00 > 109.00	24
Cypermethrin-4	15.138	163.00 > 127.10	9	163.00 > 109.00	24
Cyprodinil	9.527	224.00 > 208.10	21	225.00 > 210.10	18
DDD-p,p'	11.121	235.00 > 165.10	24	235.00 > 199.00	18
DDE-p,p'	10.466	246.00 > 176.10	27	318.00 > 246.00	21
DDT-o,p'	11.12	235.00 > 165.10	24	235.00 > 199.10	18
DDT-p,p'	11.702	235.00 > 165.10	24	235.00 > 199.00	18
Deltamethrin	16.511	253.00 > 172.00	0	253.00 > 174.00	0
Diclofop-methyl	11.925	253.00 > 162.10	21	340.00 > 253.00	18
Dicloran	7.704	206.00 > 176.00	12	206.00 > 124.10	27
Dicofol	9.289	139.00 > 111.10	15	250.00 > 139.10	15
Dieldrin	10.565	279.00 > 206.90	27	263.00 > 192.90	30

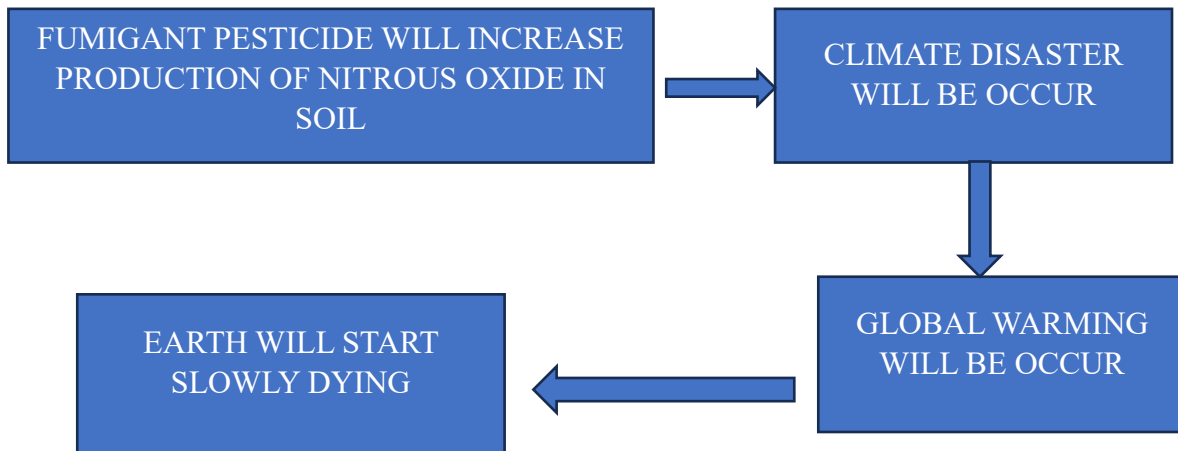
FLOW CHART OF THIS EXPERIMENT AS GIVEN BELOW

COLLECT PADDY SOIL

1]



2] FLOW CHART OF EARTH DYING



• CONCLUSION

DDT is a type of fumigant pesticide . Endosulphan also a type of fumigant pesticide.

Pesticides can also release GHG emissions after their application, with **fumigant pesticides shown to significantly increase nitrous oxide production in soils**. Many pesticides lead to the production of ground-level ozone, a greenhouse gas harmful to both humans and plants. This is cause for global warming

- How is global warming killing the earth?
- Impacts. Humans and wild animals face new challenges for survival

Because of climate .More frequent and intense drought.

Change storms, heat waves, rising sea levels, melting glaciers and warming oceans can directly harm animals, destroy the places they live, and wreak havoc on people's livelihoods and communities.

- Beyond that threshold, scientists have found, **climate disasters will become so extreme that people will not be able to adapt**. Basic components of the Earth system will be fundamentally, irrevocably altered. Heat waves, famines and infectious diseases could claim millions of additional lives by century's end

COSMIC FORENSIC

Anna Ho is a graduate student in astronomy at Caltech. For her research, she uses a robotic network of telescopes on the ground and in space to investigate the catastrophic deaths of stars (no, not celebrities). Outside her day (night?) job, she can usually be found in some superposition of hiking, exploring LA, telling the public about her research, reading Medieval literature, and learning about science policy.



- Anna-Ho
- Cosmic forensic is the field of investigation of death of the star ,earth, galaxies, planets. Earth Is in space. Space is not vaccum. In space have gravity .but it is varying in all sides. The loss of ecosystems is caused mainly by changes in land and sea use, exploitation, climate change, pollution and the introduction of invasive species.
- Some things have a direct impact on nature, like the dumping of waste into the ocean. Other causes are indirect. Those include demographic, economic, political and institutional arrangements underpinned by social values, and they interact with one another.
- For example, vast areas of land managed by Indigenous Peoples are experiencing a decline in ecosystems at a slower rate than everywhere else. But the rights of Indigenous Peoples are being threatened, which could result in faster deterioration of these areas. This would have a detrimental impact on wider ecosystems and societies. Trading overseas has increased by 900% since the start of the post-industrial era and the extraction of living materials from nature has risen by 200%.
- 'Before the Industrial Revolution, people had to look after the environment around them because that's where they got their products from,' says Andy. 'If they didn't look after it, they would face the consequences.
- 'Now with globalization, we have massive environmental impacts a long way from where we live. But we are insulated from these impacts, so they are abstract to us. Overseas trading also creates and increases inequality. The pressure for material goods comes mostly from middle and high-income countries and is often met by low To middle income countries
- For example, Japan, US and Europe alone consumed 64% of the world's imports of fish products. High income countries have their own fisheries but most of these have collapsed. Fishing now takes place in previously unexploited or underexploited fisheries, most of which belong to low-income countries. 'With the massive increase in trade, there is no longer that imperative to make sustainable choices,' says Andy. 'We can overexploit natural resources somewhere else in the world and the magnitudes of our choices are invisible to us. 'humans is the culprit. Man is killing the earth.
- Rule should be strong.

CRIMES IN OUTER SPACE

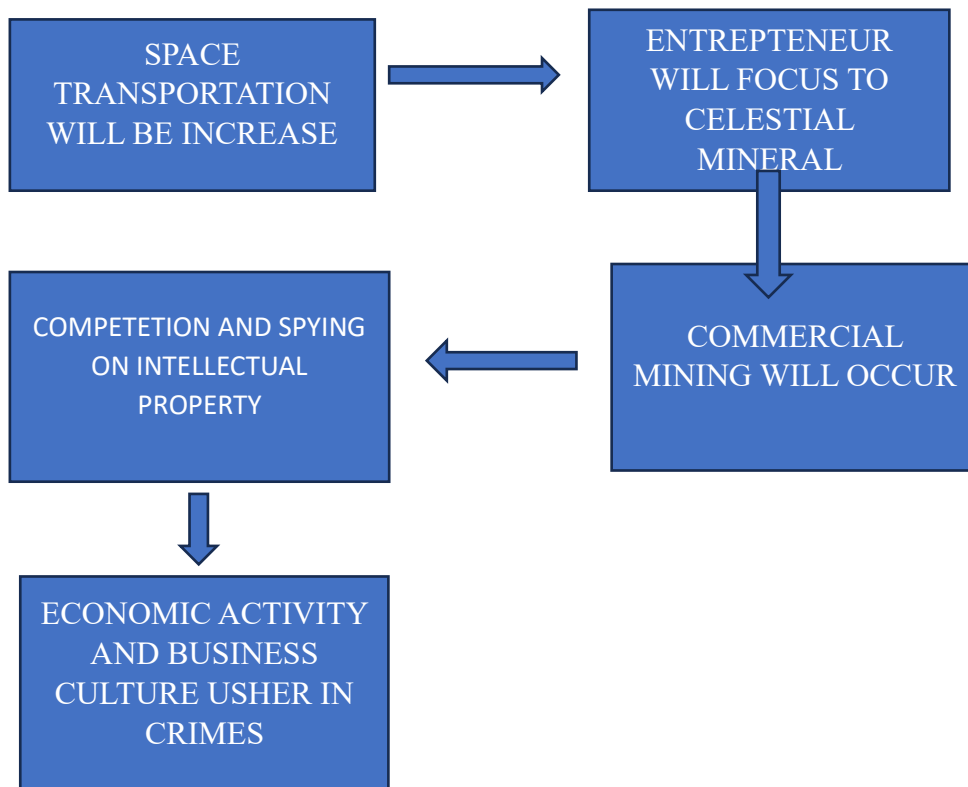
- Space transportation is expected to lead to commercial mining of celestial mineral resources from the Moon and asteroids, as has been found technically feasible and commercially viable. Space-specific products have been identified for industrial mining, processing, and manufacturing, for which manpower would be necessary, howsoever minimal, despite artificial intelligence devices. Blueprints for space habitations on the Moon and Mars are being prepared. In this scenario, where outer space and celestial bodies may soon be inhabited by multi-nationality, multi-ethnic and multi-cultural groupings of tourists ,workers, and residents, given cramped and not so comfortable or private living spaces, attitudinal disparities and conflicting beliefs, differences, disputes, conflicts, and crimes are sure to raise their head. Economic activity and business culture may usher in crimes of competition and spying on intellectual property. Space crimes through technologies like cyber, lasers, etc., may also permeate the space domain for ill-intentioned abuses. The criminals may be individuals or collective groups or incognito terrorists.
- It can now be asserted with confidence that human beings whether on Earth or in outer space or on a planetary body remain the same, physically, mentally, and genetically. Their reflexes do not change,

their thought-process remains the same and their mindset also persists in fixations. In space, while living and interacting in multi-ethnic and multi-cultural environment, human mind may evolve through sympathetic learning in the new companionship and camaraderie. A person may acquire new or modified habits through revised social responses and frequent cultural mixing, but it may take a long time depending upon personal propensity: ability to change, capacity to imbibe, and acceptance of novelty.

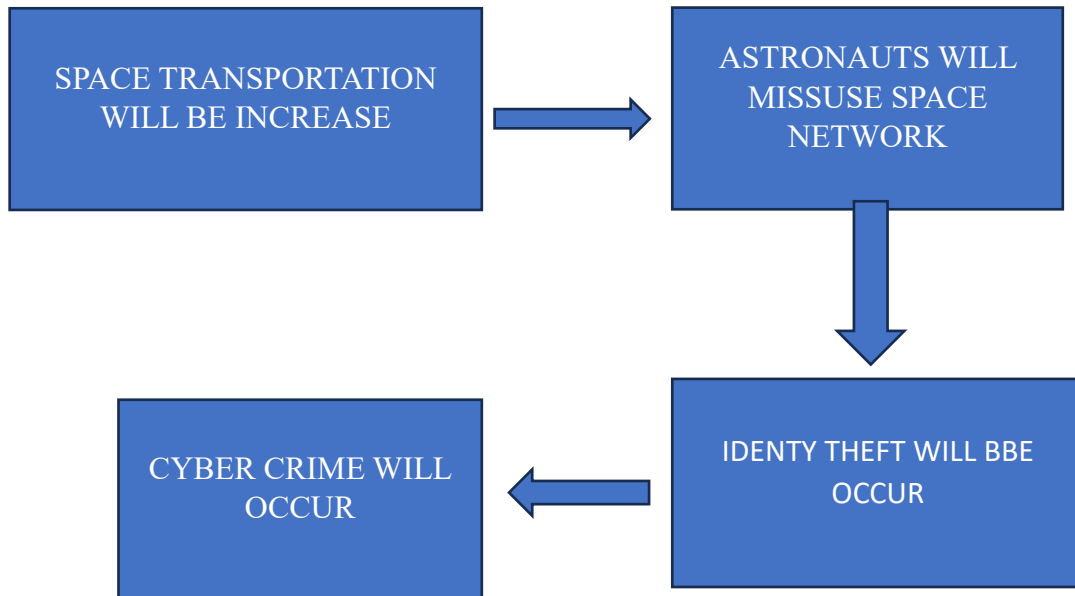
Evidence Of Space Crime

- Astronaut Anne McClain is accused of identity theft and improperly accessing her estranged wife's private financial records
- Anne McClain has said to have done so while she was on a 6-month mission aboard the International Space Station
- Anne McClain gained fame for being one of two women picked for a historic all-female spacewalk space agency Nasa is investigating what may be the first crime committed in outer space. Astronaut Anne McClain is accused of identity theft and improperly accessing her estranged wife's private financial records while on a sixth-month mission aboard the International Space Station (ISS)

HOW OUTER SPACE CRIME WILL BE OCCUR?



2]



OUTCOME OF THIS STUDY

- Discovery of space forensic
- Human is the prominent factor behind the earth dying
- Outer Space crime has been happened
- Cosmic forensic explained
- Space forensic is the new topic of forensic science
- Death of the earth is cosmic crime
- Space crimes will increase in future
- Entrepreneurs will misuse resources in outer space for business purpose
- Global warming will cause the death of the earth
- Pesticide use can cause global warming

SOLUTION FOR CONTROL GLOBAL WARMING

1. Core to all climate change solutions is reducing greenhouse gas emissions, which must get to zero as soon as possible. Because both forests and oceans play vitally important roles in regulating our climate, increasing the natural ability of forests and oceans to absorb carbon dioxide can also help stop global warming.

2. Turn off electronic devices

Simply turning off your television, DVD player, stereo, and computer when you're not using them, will save you thousands of pounds of carbon dioxide a year.

3. Use less hot water

It takes a lot of energy to heat water. Use less hot water by taking shorter and cooler showers and washing your clothes in cold or warm instead of hot water (more than 500 pounds of carbon dioxide saved per year).

4. Recycle more

You can save 2,400 pounds of carbon dioxide per year by recycling just half of your house hold waste.

5. Drive less

Walk, bike, carpool or take mass transit more often. You'll save one pound of carbon dioxide for every mile you don't drive



NOORULHUDA.C

Noorulhuda is a post graduate student in MSC chemistry at acharya institute of graduate studies bangaluru. she under graduated in BSC forensic science from aditya degree college. Through constant research, a new topic called space forensic was discovered and chemistry was applied in it. Space forensic has been discovered as new branch of forensic science.

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