



Trees of NIAS: Nature's Bounty

Holiday project at
National Institute of Advanced Studies
IISc campus, Bangalore

by

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Acknowledgements:

I am grateful to National Institute of Advanced Studies (NIAS) for giving me the opportunity to do this extremely interesting and fulfilling holiday project and I thank the Director and administration for providing me with all facilities to complete it. I enjoyed doing this project, it helped me a lot. It was nice to meet many faculty members and all the staff. I got a chance to meet so many nice people. I enjoyed the canteen delicacies. I learnt the names of many trees and now I can identify them too. I also learnt about GPS, how to use it and how to make maps on Google Earth.

I am grateful to Mr Krishnappa, Head Gardener at NIAS for showing me the location of the trees and sharing his personal experiences in their planting and caring. I thank Ms Sreeja K.G. for teaching me to identify the trees and also their botanical names. I thank Dr. M.B.Rajani for guiding me regarding GPS and also map making. I thank Ms. Anu Joy and Ms. Nalini N.S. for their help during the project.

Last but not the least I thank my parents for giving me encouragement and support.

Introduction:

In summer of 2011 National Institute of Advanced Studies (NIAS) conducted a workshop for middle/high school children called 'How to map what's around you!'. Seventeen students from different schools participated in the workshop. In the workshop we learnt various aspects of mapping, such as about latitude/longitude, direction, scales, symbology, legends, etc. We also learnt to use Google Earth, locate places and make maps. We learnt to use GPS and then load the points on to Google Earth and view the points on the background of satellite image.



As part of the workshop we did a project on Trees of NIAS, in which 34 different kinds of trees were mapped. Each participant chose 2-3 or more types of trees and mapped their locations in the campus. While doing this I realized the rich diversity in NIAS, especially the different types of trees in the campus. After the course I got very interested in trees. I started noticing trees on road wherever I went, whether around home, around school or out of town during holiday trips. Then I found that NIAS was one place where many different kinds of trees can be seen within a small area. This inspired me to further extend the work we did in summer workshop and try to map as many trees as possible in NIAS campus. Though my school had started by then, I came and worked on Sundays and other holidays for this project.

Method:

We started by doing the GPS survey. Ms Sreeja K.G. guided me in identifying trees and classifying them. We went together around the campus, she identified the trees, I would mark a point in the handheld GPS and then make a note of the point ID number and the Plant name. These GPS points were then downloaded on to computer using MapSource software, and then viewed on Google Earth along with the background of satellite imagery. On Google Earth separate directories were made for each tree and ID numbers were saved into respective directories. Distinctive symbols were then assigned to each type of tree. After this we could make maps on Google Earth of

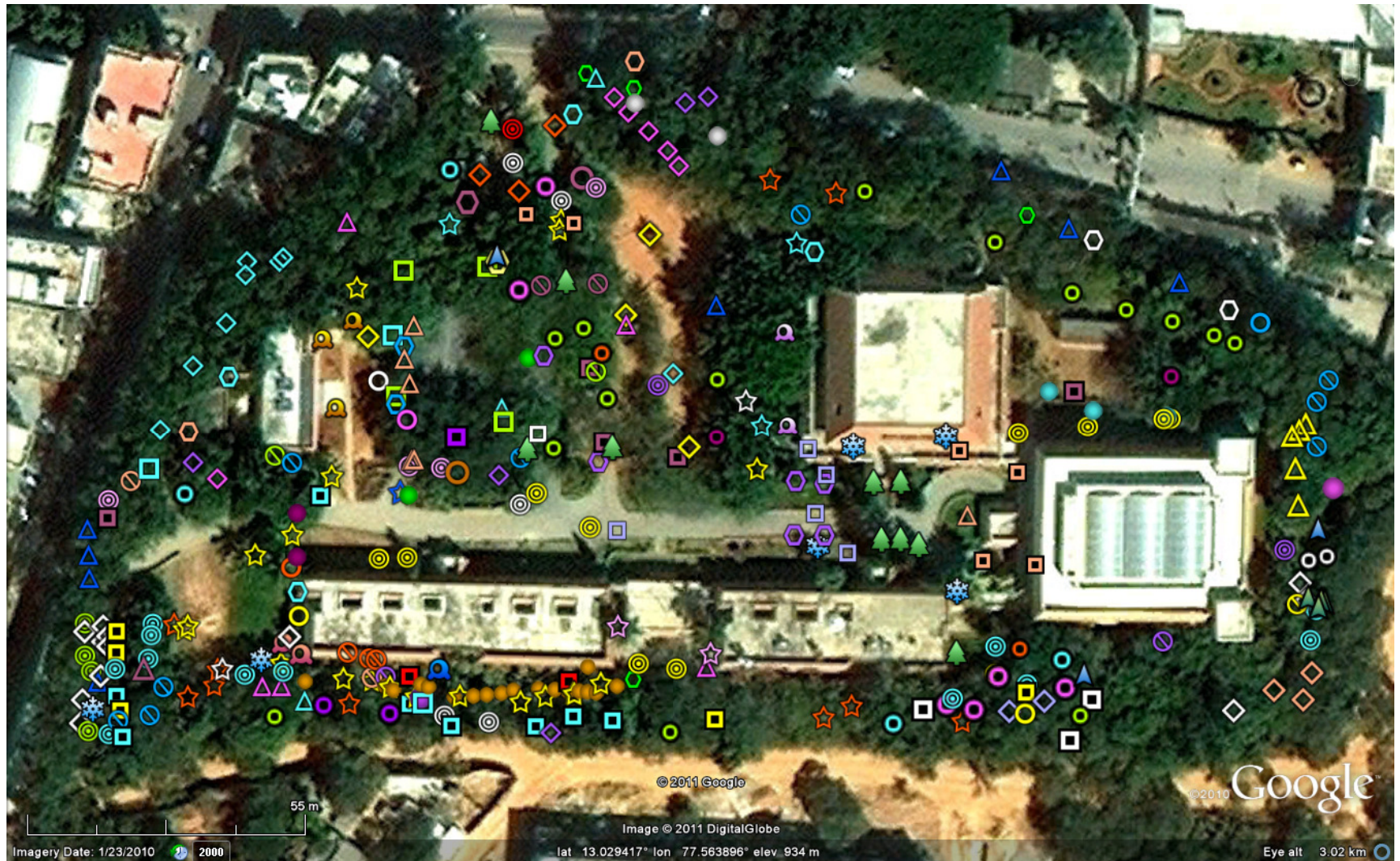
individual trees, groups of trees or all the mapped trees. I was guided by Dr M.B.Rajani regarding GPS and mapping. The GPS equipment we used has an accuracy of less than 10m. So the position of individual trees can be displaced by few metres. But with the help of maps one can go to the location and with the help of pictures the tree can be spotted.























About the book:






























In spite of trying our best it was still not possible to cover all the trees in NIAS. We have identified and geocoded, in the approximately 5.2 acre NIAS campus, a total of 363 trees which belong to 82 different species, 69 genera and 33 families. This book has a map in the beginning showing all the mapped trees, each type of tree has a different symbol. There is a Legend Box that gives names for each symbol. After that one page dedicated to each type of tree in which there are few pictures of that particular tree, details and description about the tree, and a map showing its locations in NIAS campus as red dots (●). Among the pictures printed in this book around 76% were taken on campus. The rest were downloaded from the Internet. This is because the flowering and fruiting season vary and they are also in various stages of their life cycle, from saplings to mature trees. In some cases the tree was too tall or was hiding amidst other trees or behind and close to buildings. Therefore it was not possible to take good distinctive photos. The photos taken in NIAS can be identified as they are marked with black borderline () and photos downloaded from Internet are marked with blue borderline (). After the pages with details of individual trees, there is an index with list of trees (botanical, family and common names), GPS IDs and page numbers. After the index there is reference list of books and websites that were referred to for description. At the end there is a database of GPS IDs which has listed latitude/longitude of each GPS ID, and also the date and time when each one was mapped.



























This is in no way a complete list of trees in NIAS. In future anybody interested can add on and complete the list.

Trees of NIAS



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	Bottle Brush Tree	30
	Calabash	38
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Trees



Gymnosperms

The gymnosperms are a group of seed-bearing plants that includes conifers, cycads etc. The term "gymnosperm" comes from the Greek word '*gymnospermos*' meaning "naked seeds", after the unenclosed condition of their seeds.



Quarpine



Botanical name: *Araucaria heterophylla*

Family: *Araucariaceae*

Origin: Norfolk island

Flowering season: ---

Common name: Norfolk pine, Quar pine

Description: *Araucaria heterophylla* is a distinctive conifer. The trees grow to a height of 50–65 m, with straight vertical trunks and symmetrical branches. The leaves are awl-shaped. The thickest, scale-like leaves on coning branches are in the upper crown. The cones are squat globose. They disintegrate at maturity to release the nut-like edible seeds. They are sometimes used as Christmas trees. The wood of this tree is very valuable and is used in the manufacture of furniture [26].



Sago Palm



Botanical name: *Cycas revoluta*

Family: *Cycadaceae*

Origin: Japan

Flowering season: Mar-Apr

Common name: Sago palm

Description: Sago palm is actually not a palm at all but is a cycad. Cycads are a group of plants that are very primitive in their origins. They are slow growing, perennial plants. They have erect sturdy trunks which can branch multiple times. Leaves are shiny and dark olive green in colour. The leaflets are long, narrow, stiff and have strongly recurved or revolute edges [61], 62].



Morpankhi



Botanical name: *Platycladus orientalis*/
Thuja orientalis

Family: *Cupressaceae*

Origin: China, Korea

Flowering season: ---

Common name: Morpankhi

Description: It is a distinct genus of evergreen coniferous tree in the cypress family. It is an evergreen, slow-growing tree. The leaves are like little scales overlapping and tightly packed on the shoots. The bark is rusty-brown and fibrous. The cones are green ripening brown in about 8 months from pollination. They are small and are located at the tips of the twigs. They are widely grown as ornamental trees [57], [58].



Angiosperms

The angiosperms are flowering plants and the largest group in the plant kingdom. The name derives from the fact that the seeds are enclosed in an ovary. Angiosperms provide us with our flowers, the vegetables in our diet, and our hardwood trees. They are of two types:

- Monocotyledons: A plant having single cotyledon in the seed and usually having parallel-veined leaves and flower parts arranged in groups of three (p.13-17).
- Dicotyledons: A flowering plant with two embryonic seed leaves or cotyledons that usually appear at germination (p.18-92).

Indian Thorny Bamboo



Botanical name: *Bambusa bambos*

Family: *Poaceae*

Origin: Tropical Asia

Flowering season: Once in its life time

Common name: Indian thorny Bamboo



Description: They are found in tropical and sub-tropical areas. A very densely tufted bamboo, producing large dense clumps of closely packed culms. Culms are strong, cylindrical, erect, hollow and dark green in colour. The upper leafy branches bear small spines. A single clump on flowering gives about 50-100 kg of seeds. The bamboo shoot is edible [54].



Golden Bamboo



Botanical name: *Bambusa vulgaris*

Family: *Poaceae*

Origin: Himalayas

Flowering season: Once in its life time

Common name: Golden bamboo

Description: It is an open clump type bamboo species with lemon yellow culms in green stripes. They have dark green leaves. It is one of the largest species of bamboo. Flowering is not common, and there are no seeds. At the interval of several decades the whole population of an area bloom at once, and individual stems bear a large number of flowers. Fruits are rare. The most practised cultivation method is culm or branch cutting. The stems used as fuel and the leaves used as fodder [55].



Coconut



Botanical name: *Cocos nucifera*

Family: *Arecaceae*

Origin: South East Asia, South America

Flowering season: Year-round

Common name: Coconut

Description: It is found across much of the tropics. It is a large palm growing very tall with pinnate leaves. Old leaves break away cleanly, leaving the trunk smooth. The various parts of the coconut have a number of culinary uses. The nut provides oil for frying, cooking. The white, fleshy part of the seed is edible and used fresh or dried in cooking. Coconuts are part of the daily diet of many people. Coconut water and coconut milk are very popular during summer season. Both male and female flowers occur in the same inflorescence [9].

● Banana



Botanical name: *Musa sp.*

Family: *Musaceae*

Origin: Tropical South and Southeast Asia

Flowering season: Annual

Common name: Banana

Description: This extensively cultivated plant has been common in all tropical countries for many, many years. It is not a tree, but a huge, herbaceous plant, which means that it does not form a woody stem. There are about 300 species of *Musa*, all growing best in hot, damp atmospheres. The many types grown vary greatly in size, colour and shape of the fruit. The skin of the fruit is used in dyeing, the sap contains tannin and makes a black stain on cloth and so can be used as marking ink. The flowers, the central portion of the stem, shoots and buds of young plants are all eaten [2].



Royal Palm



Botanical name: *Roystonea regia*

Family: *Arecaceae*

Origin: Florida, Mexico and the Caribbean Islands

Flowering season: Year-round

Common name: Royal Palm tree



Description: They are distinguished by tall, smooth, columnar trunks and large pinnate fronds. The bark is palest grey in colour. The leaves of the Royal Palm Tree are jam-packed with narrow leaflets. These leaflets are inserted alternately in opposite ways. The male and female flowers stay on the same tree. The fruits of this tree are small in size and round shaped. They are light purple in colour when they become mature and normally appear in clusters. It is planted as an ornamental tree [78].



Ear Pod Wattle



Botanical name: *Acacia auriculiformis*

Family: *Fabaceae (Mimosaceae)*

Origin: Australia, Indonesia

Flowering season: July-Oct

Common name: Auri, Earleaf Acacia

Description: It is a fast growing evergreen, tree. It has dense foliage with an open spreading crown. The trunk is crooked. Leaves are thick leathery and curved. Flowers are bright yellow and sweet scented. Pods are flat and cartilaginous, twisted at maturity. Seeds are transversely held in the pod. This plant is raised as an ornamental plant, as a shade tree and it is also raised on plantations for fuelwood [29].



White Bark Acacia



Botanical name: *Acacia leucophloea*

Family: *Fabaceae (Mimosaceae)*

Origin: Indo-Malayan region

Flowering season: Aug-Nov

Common name: White bark acacia

Description: It is a moderate sized tree with a spreading crown. The trunk is crooked. Fruits are thin, flat and curved pods. Bark is smooth and white to yellowish grey. Flowers are cream to yellowish. Pod is brown, flat, curved and densely hairy. The feathery green foliage offers a strong contrast to the light-coloured bark. Plant pacifies cough, wounds, skin diseases etc. [30]



Red Bead Tree



Botanical name: *Adenanthera pavonina*

Family: *Fabaceae (Mimosaceae)*

Origin: China, Malaysia

Flowering season: Mar-Aug

Common name: Red bead tree, Red sandalwood tree

Description: It is a medium to large sized tree. Fruits are curved, hanging, green pods that turn brown, coil up and split open as they ripen to reveal small bright red seeds. The leaves are green. The flowers are small, yellow in colour and grow in dense inflorescence. The seeds are used in necklaces and ornaments. The raw seeds are toxic but when cooked they are edible. The wood of this tree is used in cabinet making. A red powder made from the wood is also used as an antiseptic paste. [31]



Batino



Botanical name: *Alstonia macrophylla*

Family: *Apocynaceae*

Origin: Sri Lanka

Flowering season: July-Sept

Common name: Batino, Hard Devil's tree

Description: It is a fast growing, tall, evergreen tree. Leaves are in whorls of three and are clustered at the end of the branchlets. They are pointed at both the ends and are dark green and shiny. The flowers are small, white, scented and form loose clusters among the leaves at the end of the twigs. Two fruits develop from each flower, which are long, slender and hang in clusters. Seeds are small and very flat with tufts of long brown hair at either end. It is an ornamental tree. The bark in the form of a powder is used as a tonic [36].

▣ Jack Fruit



Botanical name: *Artocarpus heterophyllus*

Family: *Moraceae*

Origin: South-East Asia

Flowering season: Year-round

Common name: Jack fruit



Description: It is a large evergreen tree which is widely cultivated in tropical areas. It is the largest edible fruit in the world. It is the national fruit of Bangladesh. Flowers are unisexual in separate inflorescences. The entire female inflorescences together with the parts of individual flowers forms a large multiple fruit. The bark is rich with milky latex. Sepals and petals become fleshy and juicy to form the edible part of the fruit [13].

Neem



Botanical name: *Azadirachta indica*

Family: *Meliaceae*

Origin: India sub-continent

Flowering season: Feb-May

Common name: Margosa, Bevu

Description: Neem is a fast growing tree growing in tropical and semi-tropical regions. It is evergreen, but in severe drought it may shed most or nearly all of its leaves. The branches are wide spread. The fairly dense crown is roundish or oval. The leaves are long and dark green in colour. The flowers are white and have a fragrance. Bisexual flowers and male flowers exist on the same individual. The fruit is extremely poisonous to mammals and not to birds. All parts of the tree is said to have medicinal properties [21].



Camel Foot Purpurea



Botanical name: *Bauhinia purpurea*

Family: *Fabaceae*

Origin: India, China, Pakistan

Flowering season: Nov-Feb

Common name: Camelfoot tree, orchid tree, Kachnar.

Description: It is a small size deciduous tree. The fruit is a pod containing several seeds. The flowers are in a dense, large panicles. This is a very popular ornamental tree in subtropical and tropical climates, grown for its scented flowers. It is also called mountain-ebony or orchid tree. It can be used to attract hummingbirds. In some areas it has become naturalized and invasive [8].



Yellow Bauhinia



Botanical name: *Bauhinia tomentosa*

Family: *Fabaceae*
(*Caesalpinaceae*)

Origin: Tropical Asia, Africa

Flowering season: Year-long

Common name: Yellow orchid tree

Description: It is a medium to large shrub or a small deciduous tree with attractive bright yellow flowers. Leaves are light green in colour, with a leathery texture, carried on branches that are often drooping. The flowers are bell shaped, with a black to deep maroon centre. The fruit are pea like, slender and velvety. They are light green, turning a pale brown with age. Bark is gray or brown. The flowers of this tree are rich in nectar and attract many birds and insects. [32]

🚫 Annatto



Botanical name: *Bixa orellana*

Family: *Bixaceae*

Origin: America

Flowering season: Oct-Dec

Common name: Annatto, Lipstick tree

Description: It is a perennial shrub or a small tree. The leaves are wide and pointed. Flowers occur in vertical upright clusters, which prominently appear above the foliage. They are showy, white or pink, with five petals and a dense mass of stamens in the center. The fruits are red and spiny. There are many seeds with a scarlet covering. The seedpod is either green or red. The dye obtained from this tree is used as a safe colouring agent for food [60].



Red Silk Cotton Tree



Botanical name: *Bombax ceiba*/
B.malabarica

Family: *Bombacaceae*

Origin: India and Malaya

Flowering season: Jan-March

Common name: Red Silk tree

Description: This is a tall native, fast growing tree. This tree is a blaze of colour and completely leafless when in bloom. The numerous, large, cup-shaped, crimson flowers are very attractive. They are clustered at the end of the branches and appear before new leaves. The leaves are large. Large green fruits dangle from the tree that turn brown ejecting the soft cotton attached to the seeds. The fruits have five partitions. Seeds are covered with silky white hair [1].



Scarlet Flame Bean



Botanical name: *Brownea coccinea*

Family: *Fabaceae* (*Caesalpinaceae*)

Origin: Tropical America

Flowering season: July-Jan

Common name: Mountain rose

Description: Scarlet Flame Bean is a slow-growing, small tree with large heads of orange-red flowers. Generally, the exotic looking flowers are not visible at all from the outside. The leaves are pink-brown and pendulous when young. Flowers are borne in large, bright, orange-red clusters, hanging mostly beneath foliage primarily on older branches. Fruit is a woody pod. Bark is grey and vertically fissured. The young leaves make the tree look very showy. [33]

▣ Palash



Botanical name: *Butea monosperma*

Family: *Fabaceae*

Origin: India

Flowering season: Jan-March

Common name: Palash, Flame of the forest

Description: It is a medium sized deciduous tree. It is slow growing. The leaves have three leaflets. The flowers are bright orange-red which are scentless and consist of five petals. The flowers are found at the ends of the stalks. The trunk is usually crooked and twisted with irregular branches and rough, grey bark. The fruit is a pod. The flowers are used to prepare the traditional holi colour [56].



Bottle Brush Tree



Botanical name: *Callistemon lanceolatus / citrinus*

Family: *Myrtaceae*

Origin: Australia

Flowering season: Feb – May; Oct-Dec

Common name: Bottle brush

Description: The name “Bottle Brush” is very apt for this tree, particularly the flowers. It attracts nectar feeding insects, especially bees, in good numbers. The fine leaves and the bright red inflorescence make this tree sought after for landscaping and planting in gardens and parks. It is also a tree suited for planting in small spaces. Each flower head produces a profusion of seed capsules which can remain on the plant for a long time [1].

■ Papaya



Botanical name: *Carica papaya*

Family: *Caricaceae*

Origin: America

Flowering season: Year-round

Common name: Pawpaw, Papaya

Description: The papaya is a large tree-like plant, with a single stem with spirally arranged leaves confined to the top of the trunk. The lower trunk is conspicuously scarred where leaves and fruit were borne. The tree is usually unbranched. The leaves are large. The fruit is ripe when it feels soft and its skin has attained an amber to orange hue. Papayas can be used as a food, a vegetable, and in medicine. The stem and bark are also used in rope production [22].



Golden Shower



Botanical name: *Cassia fistula*

Family: *Fabaceae*

Origin: India, Burma and Sri Lanka

Flowering season: Feb- Apr

Common name: Kakke mara, Amaltas



Description: The inflorescence of golden yellow flowers borne on green stalks resembles a chandelier. The leaves of this tree are very tender. Also characteristic are the pods of this tree which could be up to two feet in length. Each seed, encapsulated in a sweetish pulp is housed in a separate compartment within the foot-long pod. The pulp is said to have mild laxative properties. It is propagated from the seeds. When in bloom, the tree has somewhat sparse foliage otherwise it has thick, dark green foliage. It is used for ornamental purposes [1].



Pink Shower



Botanical name: *Cassia javanica*

Family: *Fabaceae*

Origin: Java and Sumatra

Flowering season: April-May

Common name: Java cassia, Pink shower

Description: It is a semi-deciduous, fast growing tree with a spreading crown. It has a straight trunk, horizontal branches and drooping branchlets which bear the foliage. During winter the tree is leafless and is in flush along with the pink flowers during the hot months. The flowers are pinkish with yellow coloured stamens. The leaves are made up of 12 pairs of leaflets. The fruit is long cylindrical pod with many seeds. The tree is cultivated for decorative purposes [1], [14].

● Popcorn Bush Cedar



Botanical name: *Cassia spectabilis*

Family: *Fabaceae*

Origin: Tropical South-East Asia

Flowering season: Mar-Sept

Common name: Popcorn Bush cedar



Description: It is fast growing, medium sized tree with a dense canopy. It has narrow, pointed leaves which are arranged alternately. Fruit is a long, compressed pod which is dry, hard and is brown in colour. Showy yellow flowers are scented and attract butterflies and they come in big clusters. They are multi-trunked and the branches droop. The seeds of this tree are a potential source of commercial gum [76], [77].

● Parijat



Botanical name: *Citharexylum spinosum*

Family: *Verbanaceae*

Origin: Caribbean territories

Flowering season: Nov-April

Common name: Fiddlewood

Description: A fast growing moderate sized evergreen tree. Leaves are simple and lush green. The young leaves turn an unusual salmon-orange colour. The flowers are creamy white, scented and appear at the branch ends. Bark is grey, smooth and it peels off as vertical shreds exposing a lighter inner bark. The wood of this tree is used to make musical instruments. Moderate salt tolerance allows planting near the beach. The tiny flowers are a favourite to the bees [36].

Lime



Botanical name: *Citrus sp.*

Family: *Rutaceae*

Origin: Asia

Flowering season: Year-round

Common name: Lime

Description: It is an evergreen, thorny shrub or tree grown in tropical or sub-tropical regions. The fruits of this tree are round and green-yellow in colour. They have a green juicy pulp and they may or may not contain seeds. This tree has leathery leaves and small, white, fragrant flowers and stiff branches. Limes are a good source of vitamin C. The acid juice of the fruit is used in flavoring [51].



Colville's Glory



Botanical name: *Colvillea racemosa*

Family: *Fabaceae (Caesalpiaceae)*

Origin: Madagascar

Flowering season: May-June;
Aug-Oct

Common name: Colvillea

Description: It is a medium sized deciduous tree with a slender feather canopy. Leaves bear many leaflets. Flowers are fiery orange-red and produced on long drooping inflorescences. Stamens are longer than corolla. Fruit is a cylindrical pod. Bark is coppery. Colvillea is best cultivated as an ornamental tree. Its genus is named for Sir Charles Colville, a former Governor of Mauritius [36].

Calabash



Botanical name: *Crescentia cujete*

Family: *Bignoniaceae*

Origin: West Indies, Central America and the Carribean.

Flowering season: Oct -Feb

Common name: Calabash, Sokeburude



Description: It is a small evergreen tree. The flowers of this tree have a foul smell and are produced on short pedicels. The fruit has a hard but smooth shell containing numerous flattened seeds, which are embedded in fleshy pulp. They take about 6 months to ripen. The fruits cannot be eaten but they are used for many ornamental purposes. The fruits are pollinated by bats. Now they are cultivated mainly for their oddity value. The fruits were used as bowls, the hardwood for tool making and bark foilers for twines and ropes. [6]

Gulmohur



Botanical name: *Delonix regia*

Family: *Fabaceae*

Origin: Madagascar

Flowering season: April-June

Common name: Kattikai mara,
Gulmohur, Flamboyant

Description: It is a fast growing deciduous species. The leaves are feathery and beautiful particularly when young. The tree bursts into bloom with the onset of the hot season. And when it does, it is bereft of leaves and is transformed into a mass of scarlet. The flat, foot long pods of this tree are very characteristic and persist. The tree has conspicuous buttresses that at times spread extensively. The Small Green Barbets often find this tree ideal for nesting. These trees add colour to the city when they start blooming [1].

Golden Trumpet



Botanical name: *Dolichandrone platycalyx/ Markhamia lutea*

Family: *Bignoneaceae*

Origin: East Africa

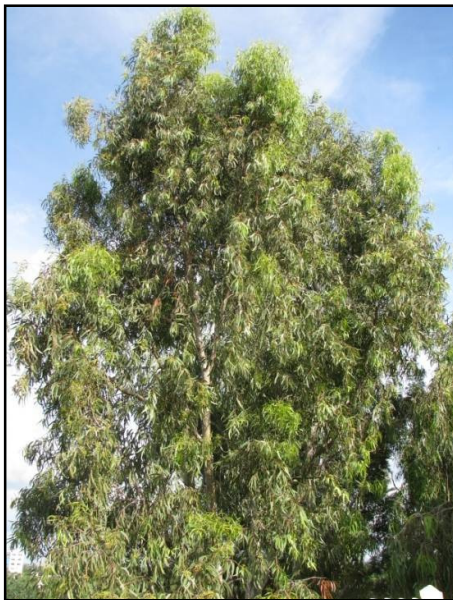
Flowering season: March-Oct

Common name: Nile tulip tree, Siala

Description: It is an evergreen tree and does not branch out much. The tubular yellow flowers are borne in clusters and are very attractive. After the flowering season one can see long pods hanging on the trees. As the pods turn brown, they become twisted. Leaves are broad and long. Bark is greyish-brown [1].



Eucalyptus



Botanical name: *Eucalyptus citriodora*

Family: *Myrtaceae*

Origin: Australia

Flowering season: Oct-Jan

Common name: Neelgiri

Description: There are about 700 species of this tree. Eucalypts are among the tallest trees in the world. The leaves are leathery in texture, hang vertically, and contain a fragrant volatile oil. The flowers in bud are covered with a cup-like membrane. The fruit is surrounded by a woody, cup-shaped receptacle and contains numerous minute seeds. The eucalyptus oil is stimulant, aromatic and antiseptic. It is probably the most powerful antiseptic of its class [10].

■ Banyan



Botanical name: *Ficus benghalensis*

Family: *Moraceae*

Origin: South Asia

Flowering season: Year-round

Common name: Banyan, Aaala



Description: A banyan is a fig that starts its life as an epiphyte when its seeds germinate in the cracks and crevices on a host tree. It is the National tree of India. The seeds of banyans are dispersed by birds. The leaves of Banyan tree are large, leathery and glossy green. Older banyan trees are characterized by their aerial prop roots that grow into thick woody trunks which, with age, can become indistinguishable from the main trunk. Banyans have unique fruit structures and are dependent on fig wasps for reproduction. Various parts of the tree are considered medicinal [5].



Weeping Fig



Botanical name: *Ficus benjamina*

Family: *Moraceae*

Origin: South of Asia and Australia

Flowering season: Year-round

Common name: Weeping fig, Java fig, Benjamin fig

Description: It is the official tree of Bangkok and Thailand. It is a topiary tree with gracefully drooping branchlets and glossy leaves. The fruits are inedible by people but they are enjoyed by some birds. It is a very popular house plant in temperate areas, due to its elegant growth and tolerance of poor growing conditions. The roots are destructive and grow rapidly invading gardens and lifting sidewalks and driveways. The plant is sensitive to cold and should be protected from strong drafts. It comes in various varieties [7].

■ Benjamin Fig 'Starlight'



Botanical name: *Ficus benjamina*
'Starlight'

Family: *Moraceae*

Origin: South-East Asia, Northern
Australia

Flowering season: Year-round

Common name: Benjamin fig 'Starlight'

Description: Starlight is a variegated form of green Weeping fig. It is a large evergreen shrub with slender-pointed green leaves broadly margined with creamy-white. The leaves are small, thick and shiny. Develops a thick trunk and aerial roots at a relatively early age. They have tiny flowers borne within a hollow receptacle which enlarges to form the fruit [74],[75].

🕉 Peepal



Botanical name: *Ficus religiosa*

Family: *Moraceae*

Origin: India, Bangladesh, Nepal, Pakistan, Sri Lanka

Flowering season: Mar-Apr

Common name: Sacred fig, Peepal

Description: It is a large dry season-deciduous or semi-evergreen tree upto 30 m tall and with a trunk diameter of upto 3 m. The leaves are cordate in shape with a distinctive extended tip. The fruit is a small fig which turns purple after ripening. This plant is considered sacred by the followers of Hinduism, Jainism and Buddhism. It is used in traditional medicine for about 50 types of disorders including asthma, diabetes, diarrhea etc. It is one of the longest living trees [23].



Silver Oak



Botanical name: *Grevillea robusta*

Family: *Proteaceae*

Origin: Australia

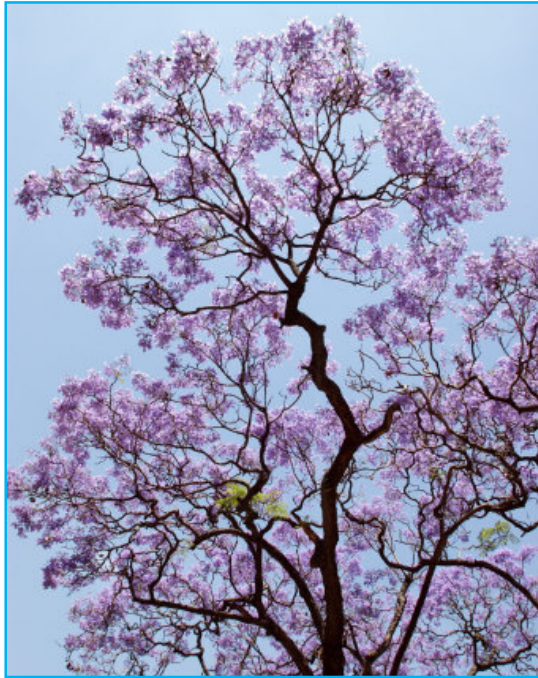
Flowering season: Feb-March

Common name: Silky-oak, Silver-oak

Description: It is a fast growing evergreen tree. The leaves are dark green, delicately dented and are reminiscent of a fern frond. Its flowers are golden-orange bottlebrush-like blooms used for honey production. The seeds mature in late winter to early spring with one or two flat, winged seeds. It is fairly drought resistant. It is a valuable timber. It is the best tree which can be used for fencing and it is one of the fastest growing trees. It is grown as shade trees in coffee/tea estates. [28]



Jacaranda



Botanical name: *Jacaranda mimosifolia*

Family: Bignoniaceae

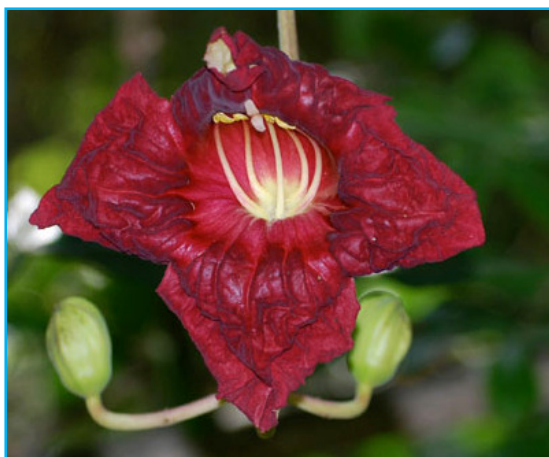
Origin: Brazil

Flowering season: Feb-March

Common name: Jacaranda

Description: Jacaranda is a very beautiful tree and spectacular when in flower. The tree grows to height of 5-15 mts. It has a canopy consisting of fine, feathery leaves due to which it has a great ornamental value. The leaves are lost during winter and bunches of flowers grow when the tree is leafless. The flowers are mauve coloured and tubular. The seeds are enclosed in a round, woody capsule and they have wings. Its bark is thin and grey-brown in colour. They hang from the tree for a long time before dropping off [1].

Sausage Tree



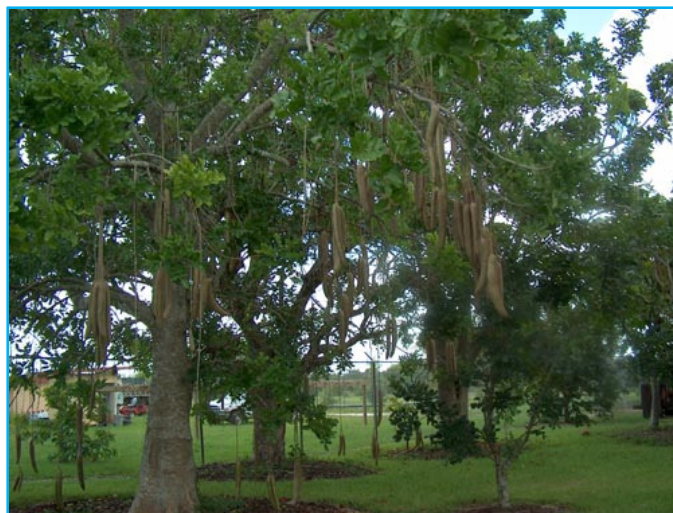
Botanical name: *Kigelia pinnata*

Family: *Bignoneaceae*

Origin: Mozambique

Flowering season: March-June

Common name: Sausage tree, Sasege mara



Description: It is a medium sized evergreen tree with a dense rounded crown. Bark is grey, generally smooth, round patches. Leaves are crowded near the end of the branches. Flowers are striking, dark maroon with heavy yellow veining on the outside. They have a foul smell and bloom at night. Fruit is very unusual, sausage shaped and greyish-brown in colour. The tree gets its common name from the fruit. The flowers and the fruits hang down from elongated wire like stalks. Raw fruits are poisonous to humans. A black dye is produced from the fruits of this tree. [34]



Queen Crape Myrtle



Botanical name: *Lagerstroemia speciosa*

Family: *Lythraceae*

Origin: Southern Asia

Flowering season: Early Summer

Common name: Queen Crape Myrtle,
Banaba, Pride of India



Description: Queen's flower is a deciduous tropical flowering tree which is medium in size with smooth, flaky bark. The leaves are deciduous. It is also widely cultivated as an ornamental plant in tropical and subtropical areas. The name Crape myrtle is given to these trees because of the flowers which look as if made from delicate crape paper. The bark is commercially used and is a valuable timber. Decoction of dried leaves is used in diabetes. The leaves are able to lower blood sugar. [16], [17].

Him Champa



Botanical name: *Magnolia grandiflora*

Family: *Magnoliaceae*

Origin: Tropical America

Flowering season: July-Sept

Common name: Bull bay



Description: It is an evergreen tree widely cultivated around the world. It typically has a single stem (or trunk) and a pyramidal shape. The leaves are large, stiff, dark green in colour with smooth margins. The flowers are also large, scented, and white in colour, emerging from the tips of twigs on mature trees. Flowering is followed by a rose coloured fruit. The timber is hard and heavy, and has been used commercially to make furniture, pallets, and veneer. It is a very popular ornamental tree. [35]

○ West Indian Cherry



Botanical name: *Malpighia glabra*

Family: *Malpighiaceae*

Origin: Surinam

Flowering season: June-July

Common name: Barbados cherry

Description: It is a medium sized evergreen tree with wide spreading branches. The leaves are dark green and glossy. The tiny pink-white flowers are bisexual and produce red-orange to bright red, juicy fruits. This fruit is round to oblate. The seed is triangular with fluted wings. These cherries are often eaten and are very high in Vitamin C content. Fruit is used against common cold. This plant attracts bees and butterflies [37], [38].

■ Mango



Botanical name: *Mangifera indica*

Family: *Anacardiaceae*

Origin: India

Flowering season: Nov-Dec

Common name: Manga, Mango



Description: Mango is the national fruit of India, Philippines and Pakistan. It is an evergreen tree widely grown in the drier tropics. It has a rounded canopy. Bark is usually dark grey-brown to black. The leaves are simple and the upper surface is shining and dark green while the lower is light green. The flowers have a sweet smell [73].



Chikoo



Botanical name: *Manilkara zapota*

Family: *Sapotaceae*

Origin: Mexico, Central America and Caribbean

Flowering season: Year-round

Common name: Chikoo, Sapodilla



Description: It is an evergreen slow-growing tree. It grows upto 18-30 mts in height. The leaves are glossy and ornamental. The flowers are bell like. Fruits are edible, smooth skinned with a grainy texture. They have two-five seeds which are black in colour. The bark is rich in a white, gummy latex. The trees can only survive in warm, typically tropical environments, dying easily if the temperature drops below freezing. The sapodilla trees yield fruit twice a year, though flowering may continue year round [12].

◎ Ceylon Ironwood



Botanical name: *Mesua ferrea*

Family: *Clusiaceae*

Origin: Sri Lanka

Flowering season: Apr-Aug

Common name: Ceylon Ironwood,
Naga sampige/champa

Description: It is a tall evergreen tree. It has simple, narrow, dark green leaves, with a whitish underside. The emerging young leaves are red to yellowish pink and drooping. The flowers have four white petals and a center of numerous yellow stamens. The fruits are somewhat round and red in colour and have 1-4 seeds. They are bisexual in nature. It is the National tree of Sri Lanka [39].



Champaka



Botanical name: *Michelia champaca*

Family: Magnoliaceae

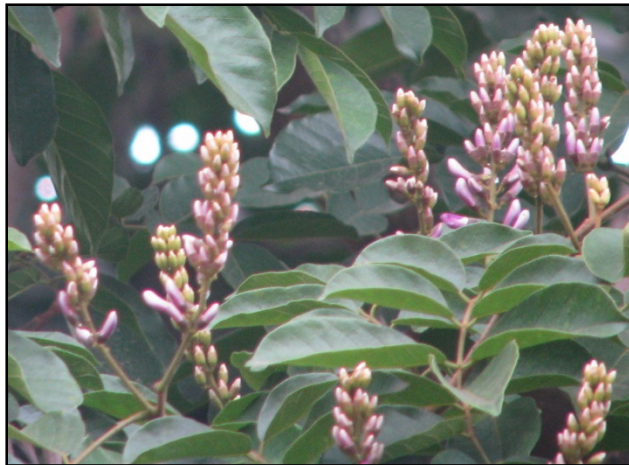
Origin: India

Flowering season: May-Dec

Common name: Champaca, Sampige

Description: It is an evergreen or semi-deciduous, medium sized tree. Leaves are simple and are arranged spirally. The upper surface of the leaf is smooth while the lower side is hairy. The flowers are large, yellow and are fragrant. The bark is smooth and is greyish-white. Seeds are small and red in colour. It is an excellent timber for furniture. Flowers cure skin diseases [63], [64].

🌀 Moulmein Rosewood



Botanical name: *Millettia peguensis*/
Pongamia ovalifolia

Family: *Fabaceae*

Origin: Burma and Siam

Flowering season: March-April

Common name: Moulmein rosewood

Description: This is a small deciduous tree, planted mostly for ornamental purposes. It has drooping branches. When it is in flower, the tree becomes leafless. Fruit is a flat pod containing two or three seeds. The flowers are pea-like and the whole crown gets draped with drooping sprays of these bright violet flowers [36].

🕒 Tree Jasmine



Botanical name: *Millingtonia hortensis*

Family: *Bignoneaceae*

Origin: Burma & Malayan archipelago

Flowering season: Sept-Oct

Common name: Indian cork tree



Description: It is a tall and straight deciduous tree, with comparatively few branches, its popularity lies in its ornamental value. It is a fast growing tree, but with brittle wood, liable to be damaged by storms. The ashy bark is fissured and is used as a substitute for true cork. The flowers are bell shaped, silvery-white with a delightful fragrance. The leaves are compound. The fruit is very long and narrow, pointed at both ends and contains thin flat seeds [40].



Kadamba



Botanical name: *Neolamarckia cadamba*

Family: *Rubiaceae*

Origin: South-East Asia

Flowering season: Aug-Sept

Common name: Kadam



Description: It is an evergreen tropical tree which has large leaves arranged loosely and therefore not forming a dense canopy. It has a broad crown. The fruit of this tree is yellow-orange in colour and occur in small, fleshy capsules packed closely containing approximately 8000 seeds. On maturing, the fruit splits apart, releasing the seeds, which are then dispersed by wind or rain. Leaves are glossy green in colour. Flowers inflorescence seen as globose cluster of subsessile flowers which are fragrant and bisexual. The fruit and inflorescence are reportedly edible to humans [15].

■ Copper Pod



Botanical name: *Peltophorum pterocarpum*

Family: *Leguminosae*

Origin: Ceylon, Andamans, Malaya and North Australia

Flowering season: March - Sept

Common name: Haladi Gulmohur



Description: The Copper Pod is considered to be a semi-evergreen tree. It is seldom leafless though it sheds leaves during the winter months for a very brief period. The name 'Copper Pod' comes from the coppery-red seed cases that are seen in profusion (they turn black with age). A species which is easy to propagate, hardy, and can survive in harsh conditions. A pretty sight when in bloom. It bears clusters of yellow flowers at the end of the branches, together with dark green leaves. The tree is large and very shapely [1].

○ Butter Fruit Tree



Botanical name: *Persea americana*

Family: *Lauraceae*

Origin: Central Mexico

Flowering season:

Common name: Avocado, Butter fruit

Description: It is an evergreen tree with huge dark green leaves in whorls. The flowers are inconspicuous, greenish-yellow and bi-sexual in nature. The fruit is a large drupe, containing a large seed. The fruit is eaten and many dishes are prepared out of it. These trees are partially self-pollinating. They are commercially valuable and are cultivated in many areas [41].

Indian Gooseberry



Botanical name: *Phyllanthus emblica*

Family: *Phyllanthaceae*

Origin: India

Flowering season: Feb-March, June-July

Common name: Amla, Indian gooseberry

Description: This is a deciduous tree which is known for its edible fruit, Amla. The tree is small to medium sized, with a crooked trunk and spreading branches. The leaves are simple, closely set along the branches and light green in colour. The flowers are greenish-yellow. Amla has been used to treat various diseases through Ayurvedic medicine therapy. It is popularly used in inks, shampoos, hair oils and dyes. [3].



White Frangipani



Botanical name: *Plumeria alba*

Family: *Apocynaceae*

Origin: Central America

Flowering season: June-Nov

Common name: Temple tree



Description: It is a large evergreen shrub. The leaves are narrow and elongated. These trees have large and strongly perfumed white flowers with a yellow center which appear at the branch tips. The leaves are coarse and are clustered only at the tips of the branches. The branches are rough, blunt and grey-green in colour and are usually soft and brittle. A milky sap is exuded from the branches when they are bruised or punctured [59].



Mast



Botanical name: *Polyalthia longifolia*

Family: *Annonaceae*

Origin: Sri Lanka, India

Flowering season: March-May

Common name: Mast, False Ashoka, Buddha tree

Description: These are evergreen trees commonly planted due to its effectiveness in alleviating noise pollution. The tree is known to grow over 30 ft in height. The leaves are long and tapering borne on short slender horizontal branches. The flowers are pale green with a hint of yellow and not very prominent. They bloom during spring season but, for a very short period of time, usually for two or three weeks. The fruits are also small, found in clusters, and are loved by many birds [1], [18].



Pongamia



Botanical name: *Pongamia pinnata*

Family: *Fabaceae*

Origin: India

Flowering season: Mar-Apr

Common name: Indian beech,
Pongam oil tree, Karanj



Description: A moderate sized semi ever green tree growing up to 20 meters in height. Leaves are pinnately compound producing a large and wide canopy. The leaves are a soft, shiny and deep green in colour. Flowers are found in clusters of pinkish white on their branches which later give rise to brown seed pods. It is used in landscaping, as a shade tree and also as windbreaks. Pongam oil extracted from the seeds is regarded as a strong antiseptic and also used for the treatment of rheumatism. The tree is also considered as a potential source of biodiesel.

○ Kanak Champa



Botanical name: *Pterospermum acerifolium*

Family: *Sterculiaceae*

Origin: India

Flowering season: Feb-May

Common name: Karnikara, Kanak Champa, Dinner Plate tree



Description: The top side of the leaves are dark green in colour and they are rough and rubbery. The bark is grey in colour and is considered to be fairly soft. Small twigs and new growth can sometimes seem feathery and are commonly more of a rusty-brown color. As the leaves are huge, they are used as a plates. The flowers of this tree serve as a pleasant perfume and also keep insects away [42].

● Sandalwood



Botanical name: *Santalum album*

Family: *Santalaceae*

Origin: India

Flowering season: Feb-May

Common name: Indian Sandalwood,
Gandhada mara

Description: Indian Sandalwood is a small tropical evergreen tree, the most commonly known source of sandalwood. The tiny flowers are greenish to begin with and turn maroon eventually. The leaves are thin. The fruits are green when raw and become blackish when ripe. The bark is smooth in young trees. It has been the primary source of sandalwood and the derived oil. The tree still commands high prices for its essential oil, but due to lack of sizable trees it is no longer used for fine woodworking as before. They may live to one hundred years of age [27], [1].



Ashoka



Botanical name: *Saraca asoca*

Family: *Fabaceae/ Caesalpiniaceae*

Origin: India, Sri Lanka, Myanmar and Malaysia

Flowering season: Throughout the year; mainly Nov - March

Common name: Ashoka

Description: This is a small sized evergreen tree with spreading branches and dense foliage of medium sized leaves. If planted in an open area, it assumes a well proportioned, round canopy. The flowers are borne on dry branches in dense clusters that are orange-red that deepens as they age. The tree looks particularly attractive when in bloom. This tree is also associated with mythology. Besides, it is attributed with a lot of medicinal properties especially the ailments of women. It is propagated by seeds. The young leaves are soft red and limp [1].

🚫 Agathi



Botanical name: *Sesbania grandiflora*

Family: *Fabaceae*

Origin: Tropical Asia

Flowering season: Nov - Jan

Common name: Agathi

Description: It is a fast-growing, small tree. The leaves are regular and rounded and they turn bright yellow before shedding. The flowers are white or pink and they are large. The fruits look like flat, long and thin green beans. The bark is light grey and the wood is soft. The flowers of this tree are eaten as a vegetable in many areas. The young pods along with the leaves are also eaten. The juice of these leaves were used as a tonic [43], [44].

African Tulip Tree



Botanical name: *Spathodea companionata*

Family: *Bignoneaceae*

Origin: Africa

Flowering season: Aug-Dec

Common name: African Tulip tree



Description: It is a dry season deciduous tree and is used as an ornamental tree. The leaves are dark green. The flower buds are ampule-shaped and contain a watery liquid. The flowers are cup-shaped and hold rain and dew and are deep orange in colour. Seeds are thin, flat and have wings. The wood of this tree is soft and brittle. The bark and the leaves are used in traditional medicines [45], [46].

▣ Mahogany



Botanical name: *Swietenia mahogani*

Family: *Meliaceae*

Origin: Southern Mexico to Peru and Brazil

Flowering season: March-April

Common name: Mahogany

Description: *Swietenia mahogani* is a medium-sized semi-evergreen tree. The flowers are small, produced in panicles. The fruit is a woody capsule containing numerous winged seeds. The bark in younger specimens is smooth and grayish, becoming darker and furrowed with age. Supplies have now become very rare due to over-harvesting, and most mahogany marketed now comes from other related species, often with faster growth but lower wood quality. It is also grown as an ornamental tree in subtropical and tropical regions [19].



Jamun



Botanical name: *Syzygium cumini*

Family: *Myrtaceae*

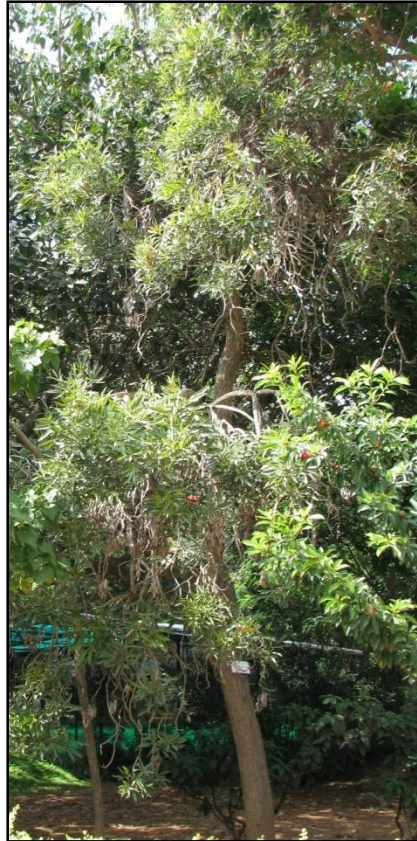
Origin: India, indonesia

Flowering season: Mar-April

Common name: Jamun, Java plum

Description: It is an evergreen fast growing tropical tree. The leaves are oblong, smooth and glossy having a terpentine smell. Jamun has fragrant white flowers in branched clusters at stem tips and purplish-black oval edible berries. The fruit has a sweet and mildly sour flavour. The bark is very strong. The leaves are antibacterial, and are used for strengthening the teeth and gums [47], [48].

Yellow Tabebuia



Botanical name: *Tabebuia caraiba*

Family: *Bignoniaceae*

Origin: Brazil, Argentina, Paraguay

Flowering season: Jan-March

Common name: Silver trumpet tree,
Yellow tabebuia

Description: They are small evergreen trees with silvery foliage. The flowers are golden-yellow, trumpet shaped. The leaves are semi-evergreen and often drop just before the flowers appear. The fruits are pod-like and are brown in colour, having winged seeds.

Pink Tabebuia



Botanical name: *Tabebuia rosea*

Family: *Bignoniaceae*

Origin: Mexico, Venezuela, Ecuador

Flowering season: Nov-Jan

Common name: Pink trumpet, Basant rani, Pink Poui



Description: Pink trumpet is a tall, fast-growing deciduous tree. Leaves are palmately divided into 5 unequal leaflets. The fruits are elongated pods, which split open to release winged seeds. The bark can be gray to brown. The tree's name comes from its large trumpet-shaped flowers, which range in colour from pink to white. A decoction of the flowers, leaves and roots has been used to reduce fevers and pain. This tree is known for its impressive flowering display [24], [25].

🚫 Tamarind



Botanical name: *Tamarindus indica*

Family: *Fabaceae* (*Caesalpinaceae*)

Origin: Tropical Africa

Flowering season: Late summer

Common name: Tamarind

Description: Tamarind is a long lived, medium growth evergreen tree. Leaves are bright green in colour. The branches droop from a single, central trunk. The tamarind produces red and yellow elongated flowers in clusters. Buds are pink as the four sepals are pink. At night, the leaflets close up. The fruit has a hard, brown shell, with a fleshy, juicy pulp. The seeds are somewhat flattened and glossy brown. Tamarind is best described as sweet and sour in taste [49].

Yellow Trumpet Tree



Botanical name: *Tecoma stans*

Family: *Bignoniaceae*

Origin: Tropical America

Flowering season: Summer

Common name: Yellow trumpet,
Yellow bells

Description: It is perennial shrub. It has sharply-toothed green leaves. Flowers are large, showy, bright yellow in colour and are trumpet shaped. They hang in showy clusters at the branch tips. The plant produces pods containing yellow seeds with papery wings. The fruit is a bean type capsule that ripens to a chocolate brown colour. The flowers attract bees, butterflies, and hummingbirds [65], [66].



Indian Almond



Botanical name: *Terminalia catappa*

Family: *Combretaceae*

Origin: Middle East and South Asia

Flowering season: Feb-May

Common name: Kadubadami, Indian almond, Badam

Description: The almond is a small deciduous tree with a spreading canopy. It has large leathery leaves which turn a rich red colour before they are shed during autumn. Male and female flowers are separate but on the same tree (monolichious). The young twigs are green at first, becoming purplish where exposed to sunlight, then grey in their second year. The flowers are white or pale pink produced singly or in pairs on the leaves in early spring. Almond trees become productive and begin bearing fruit after five years [4].



Indian Tulip Tree



Botanical name: *Thespesia populnea*

Family: *Malvaceae*

Origin: India

Flowering season: Monsoon

Common name: Indian tulip tree,
Portia tree

Description: It is a small tree. The leaves are heart shaped and shiny green in colour. The flowers are cup shaped and pale yellow in colour. They last for one to two days, turning maroon and then dropping. The seeds are greyish- brown in colour. The bark is brown and corrugated and they have scaly twigs. The fruits, flowers and young leaves are edible. The roots are used as a tonic. A yellow dye is obtained from the flowers and fruits [50].



Shrubs





Angel's Trumpet



Botanical name: *Brugmansia suaveolens*/ *Datura suaveolens*

Family: *Solanaceae*

Origin: Tropical America

Flowering season: Year-round

Common name: Angel's Trumpet

Description: It is a shrub with large flowers. The flowers are large, funnel shaped (bell-like), white in colour and are sweetly fragrant. The corolla has five points that are slightly recurved. The flowers hang almost straight down. The leaves are generally oval in shape and are long. The trunk is branched in nature. It is widely grown as an ornamental shrub [67].

● Peach Angel's Trumpet



Botanical name: *Brugmansia versicolor* / *Datura mollis*

Family: *Solanaceae*

Origin: Tropical America

Flowering season: Year-round

Common name: Peach Angel's Trumpet

Description: Peach Angel's Trumpet is a semi-deciduous shrub or a small tree. The leaves are long with smooth edges. It has giant drooping flowers, light pink in colour, which hang upside down, which is where it gets its common name of Peach Angel's Trumpet. The flowers are heavily scented. These flowers are followed by thin, long greenish yellow fruits which are poisonous [68], [69].

● Lady of the Night



Botanical name: *Brunfelsia americana*

Family: *Solanaceae*

Origin: South America

Flowering season: Year-round

Common name: Lady of the night



Description: It is a perennial shrub. The leaves are somewhat crowded on the ultimate twigs, often yellowish green and pointed at both ends. They have creamy white flowers with long tubes, which are extremely fragrant after dark. New flowers are white and fade with age to yellow. It is named Lady of the Night for its powerful fragrance in the evening, but it is mildly fragrant during the day also. Berry like fruits follow the flowers [70].



Peacock Flower



Botanical name: *Caesalpinia pulcherrima*

Family: *Fabaceae (Caesalpinaceae)*

Origin: West Indies

Flowering season: Summer

Common name: Peacock flower

Description: They are perennial shrubs having beautiful flowers. The flowers may be red, orange or yellow in colour. Each flower has five petals. The leaves are fern-like and bright green in colour. The fruits are hard, thin and flat pods. The pods are brown in colour. This flower is the national flower of the Caribbean island. This tree is used for ornamental purposes [52].

🕒 Powder puff Plant



Botanical name:
Calliandra haematocephala

Family: *Fabaceae (Caesalpinaceae)*

Origin: Southern Asia

Flowering season: Year-round

Common name: Powder-puff



Description: It is a fast growing shrub or a small tree. The flowers have numerous long slender stamens, and are produced in cylindrical inflorescences resembling a powder puff. They have silky leaves which close at night.



Exora



Botanical name: *Ixora coccinea*

Family: *Rubiaceae*

Origin: Tropical South-East Asia

Flowering season: Year-round

Vernacular name: Ixora, Jungle geranium

Description: Its name derives from an Indian deity (Eshwara). There are about 400 species in the genus *Ixora*. It is a dense, multi-branched evergreen shrub. The flowers are produced almost all year long. There are numerous named cultivars differing in flower colour (yellow, pink, orange) and plant size. It is used for hedges and screens, foundation plantings, massed in flowering beds, or grown as a specimen shrub or small tree. They are also known as the 'Jungle flame' or the 'Jungle Geranium' [11].

○ Egg Magnolia



Botanical name: *Magnolia lilifera*

Family: *Magnoliaceae*

Origin: South-West China

Flowering season: April-June

Common name: Purple magnolia,
Lily magnolia

Description: It is a deciduous shrub or a small tree with large velvet leaves. The leaves are not too large. The goblet shaped fragrant flowers are the colour of egg yolk, whitish yellow, warranting the name, with thick petals. The flowers are hermaphrodite.

Kamini



Botanical name: *Murraya exotica*

Family: *Rutaceae*

Origin: India

Flowering season: Early Summer;
Sept-Nov

Common name: Kamini, Orange
jasmine

Description: Kamini is a large multi-trunked shrub or a small tree. The leaves are dark green in colour. The flowers are cream coloured and are highly fragrant. They have an aromatic orange-like fragrance and hence, they are called orange jasmine. The flowers are followed by small oval red fruits with one or two seeds. The shrub is usually propagated from seed [53]. (The points on the map are the 4 corners of the green house: Kamini is planted as a screen plant on all four sides)



Pink Mussaenda



Botanical name: *Mussaenda erythrophylla*

Family: *Rubiaceae*

Origin: Philippines

Flowering season: Year-round

Common name: Ashanti Blood, Red Flag Bush, Prophet's tears

Description: They are generally semi-deciduous shrubs. They produce many branches, and spread out. Most of the flower-like structures that we see in Mussaenda plants in bloom are the colorful bracts, which are modified or specialized leaves. The actual flower is very small and in the center of each bract, and may be often yellow, white or orange in color. Mussaenda flowers are bisexual, but they seldom grow into fruits or produce seeds. The leaves are thick and dark green in colour. They are grown as garden plants and ornamental plants [20].



White Mussaenda



Botanical name:
Mussaenda philippica/ lutea

Family: *Rubiaceae*

Origin: Philippines

Flowering season: Year-round

Common name: White Mussaenda,
Tropical Dogwood



Description: Mussaenda is a tropical shrub or sub-shrub. Each flower is composed of an inconspicuous small tubular five-petalled corolla in orangy-yellow and five greatly enlarged sepals (bracts). The bracts are mistaken for the real flower. They generally have thick foliage with medium-sized green leaves.

Oleander



Botanical name: *Nerium oleander*

Family: *Apocynaceae*

Origin: India and Mediterranean

Flowering season: Year-round

Common name: Oleander, Kaner

Description: It is an evergreen shrub or small tree. It is toxic in all its parts. The flowers are purple in colour and are fragrant. Pink and white ornamental cultivators are also found. The flowers have 5 petals, fringed at the base. The tree has short branches and dark, dusty green, leathery and narrow leaves. The fruit is a long narrow capsule, which splits open to release numerous downy seeds [71].



Blue Jasmine



Botanical name: *Petrea arborea*

Family: *Verbenaceae*

Origin: Tropical America

Flowering season: Spring

Common name: Queen's wreath,
Sand paper vine

Description: It is a semi-shrub evergreen flowering vine with drooping long racemes of violet-purple star like flowers. Flowers are bi-sexual in nature. Leaves are rough textured giving it the common name sand paper vine. The leaves have a pointed tip.

◎ Potato Tree



Botanical name: *Solanum grandiflorum*

Family: *Solanaceae*

Origin: South America

Flowering season: Year-round

Common name: Potato tree

Description: It is a small ornamental tree. It has a round crown. The flowers are dark purple when they are young, turning paler with age. They occur in clusters and flowers of different ages can be seen in each cluster. Hence, at any given point of time the tree has flowers of all shades of purple. The large leaves are deeply indented. The young shoots and the undersides of the leaves are covered with prickles [1].

● Milk Wood



Botanical name:
Tabernaemontana divaricata

Family: *Apocynaceae*

Origin: Tropical India

Flowering season: Year-round

Common name: Milk wood, Grape jasmine

Description: These plants are shrubs and small trees. The leaves are evergreen, with a milky sap and hence, they are commonly called 'milk wood'. The flowers are white in colour and are fragrant. They have a few medicinal properties. It is a popular house plant. It is also used for ornamental purposes [72].

TREE NAMES AND GPS IDs

No.	Scientific name	Common name	Family	GPS ID	Pg
A	Gymnosperms (non-flowering trees)				
1	<i>Araucaria heterophylla</i>	Quarpace	<i>Araucariaceae</i>	111, 126, 127, 128, 129,130,135,142, 165,168	9
2	<i>Cycas revoluta</i>	Sago Palm	<i>Cycadaceae</i>	579, 580, 581	10
3	<i>Platycladus orientalis</i> / <i>Thuja orientalis</i>	Morpankhi	<i>Cupressaceae</i>	592, 591, 593, 590 598	11
B1	Angiosperms (flowering trees) Monocotyledons				
4	<i>Bambusa bambos</i>	Indian Thorny Bamboo	<i>Poaceae</i>	501, 536, 548	13
5	<i>Bambusa vulgaris</i>	Golden Bamboo	<i>Poaceae</i>	541, 542, 543, 544	14
6	<i>Cocus nucifera</i>	Coconut	<i>Arecaceae</i>	45,46,47,48,49,50,51,52,53,54,5 5,56, 57,58,59,60,61,62,63,64	15
7	<i>Musa acuminata</i>	Banana	<i>Musaceae</i>	74,84,148,149,150,151,152,153, 154,155,156,157,158,159,160,1 61,162,163	16
8	<i>Roystonea regia</i>	Royal Palm	<i>Arecaceae</i>	90,91	17

B2	Angiosperms (flowering trees) Dicotyledons				
9	<i>Acacia auriculiformis</i>	Ear Pod Wattle	<i>Fabaceae (Mimosaceae)</i>	495, 496, 497	18
10	<i>Acacia leucophloea</i>	White Bark Acacia	<i>Fabaceae (Mimosaceae)</i>	538, 539, 540	19
11	<i>Adenanthera pavonina</i>	Red Bead Tree	<i>Fabaceae(Mimosaceae)</i>	533, 535	20
12	<i>Alstonia macrophylla</i>	Batino	<i>Apocynaceae</i>	509, 563	21
13	<i>Artocarpus heterophyllus</i>	Jack Fruit	<i>Moraceae</i>	66,69,70,93,106	22
14	<i>Azadirachta indica</i>	Neem	<i>Meliaceae</i>	99,102,105,107,166,167	23
15	<i>Bauhinia variegata</i>	Camel Foot	<i>Fabaceae</i>	175,176,177,185,186,187,189, 194,195	24
16	<i>Bauhinia tomentosa</i>	Yellow Orchid Tree	<i>Fabaceae (Caesalpinaceae)</i>	499	25
17	<i>Bixa orellana</i>	Annatto	<i>Bixaceae</i>	577, 578	26
18	<i>Bombax ceiba/ B.malabarica</i>	Red Silk Cotton tree	<i>Bombacaceae</i>	554, 556	27
19	<i>Brownea coccinea</i>	Scarlet Flame Bean	<i>Fabaceae (Caesalpinaceae)</i>	498, 507, 524, 561	28
20	<i>Butea monosperma</i>	Palash	<i>Fabaceae</i>	573	29
21	<i>Callistemon citrinus/ lanceolatus</i>	Bottle Brush Tree	<i>Myrtaceae</i>	209,210,211,227,229,237,238,2 40, 246,247,518,519	30
22	<i>Carica papaya</i>	Papaya	<i>Caricaceae</i>	76,83	31
23	<i>Cassia fistula</i>	Golden Shower	<i>Fabaceae</i>	310,311,312,314,	32
24	<i>Cassia javanica</i>	Pink Shower	<i>Fabaceae</i>	349,350,351,352,353,354	33
25	<i>Cassia spectabilis</i>	Popcorn Bush Cedar	<i>Fabaceae</i>		34
26	<i>Citharexylum spinosum</i>	Parijat	<i>Verbanaceae</i>	549	35
27	<i>Citrus sp.</i>	Lime	<i>Rutaceae</i>	487, 510, 606	36

28	<i>Colvillea racemosa</i>	Colville's Glory	<i>Fabaceae</i> (<i>Caesalpiniaceae</i>)	488, 489	37
29	<i>Crescentia cujete</i>	Calabash	<i>Bignoniaceae</i>	296	38
30	<i>Delonix regia</i>	Gulmohar	<i>Fabaceae</i>	73,92,109,115,116,117,118,119, 120, 121,123,137,140,141,143	39
31	<i>Dolichandrone platycalyx</i> / <i>Markhamia lutea</i>	Golden Trumpet Tree	<i>Bignoniaceae</i>	532, 558, 562, 564	40
32	<i>Eucalyptus sp.</i>	Eucalyptus	<i>Myrtaceae</i>	212,214,215,218,221,222,223,2 24, 225,226,241,248,249	41
33	<i>Ficus benghalensis</i>	Banyan	<i>Moraceae</i>	164	42
34	<i>Ficus benjamina</i>	Benjamina Fig	<i>Moraceae</i>	198,621	43
35	<i>Ficus benjamina (White)</i>	Benjamina Fig 'Starlight'	<i>Moraceae</i>	588,589,612,613,614,615	44
36	<i>Ficus religiosa</i>	Peepal	<i>Moraceae</i>	98,108	45
37	<i>Grevillea robusta</i>	Silver Oak	<i>Proteaceae</i>	291,320,321,322,323,324,325,3 26	46
38	<i>Jacaranda mimosifolia</i>	Jacaranda	<i>Bignoniaceae</i>	293,309	47
39	<i>Kigelia pinnata</i>	Sausage Tree	<i>Bignoniaceae</i>	494	48
40	<i>Lagerstroemia speciosa</i>	Pride of India	<i>Lythraceae</i>	503, 604	49
41	<i>Magnolia grandiflora</i>	Him Champa	<i>Magnoliaceae</i>	568, 569	50
42	<i>Malpighia glabra</i>	West Indian Cherry	<i>Malpighiaceae</i>	525, 534	51
43	<i>Mangifera indica</i>	Mango	<i>Anacardiaceae</i>	67.68,72,77,79,82,86,87,169	52
44	<i>Manilkara zapota</i>	Chickoo	<i>Sapotaceae</i>	80,81,144	53
45	<i>Mesua ferrea</i>	Ceylon Ironwood	<i>Clusiaceae</i>	490	54
46	<i>Michelia champaca</i>	Champaka	<i>Magnoliaceae</i>	594,595, 596, 597, 600, 601	55
47	<i>Millettia peguensis</i> / <i>Pongamia ovalifolia</i>	Moulmein Rosewood	<i>Fabaceae</i>	491	56
48	<i>Millingtonia hortensis</i>	Tree Jasmine	<i>Bignoniaceae</i>	553	57
49	<i>Neolamarckia cadamba</i>	Kadamba	<i>Rubiaceae</i>	203	58

50	<i>Peltophorum pterocarpum</i>	Copper Pod	<i>Leguminosaceae</i>	71,114,124,136, 139	59
51	<i>Persea americana</i>	Butter Fruit tree	<i>Lauraceae</i>	567	60
52	<i>Phyllanthus emblica</i>	Amla	<i>Phyllanthaceae</i>	75,78	61
53	<i>Plumeria alba</i>	White Frangipani	<i>Apocynaceae</i>	584, 585	62
54	<i>Polyalthia longifolia</i>	Mast	<i>Annonaceae</i>	216,217,218,220	63
55	<i>Pongamia pinnata</i>	Pongamia	<i>Fabaceae</i>	178,179, 286, 288, 289, 290, 292, 295, 299, 307, 318, 319, 327,328,329,331, 332,333	64
56	<i>Pterospermum acerifolium</i>	Kanak Champa	<i>Sterculiaceae</i>	505	65
57	<i>Santalum alburn</i>	Sandalwood	<i>Santalaceae</i>	196,197	66
58	<i>Saraca asoca</i>	Ashoka	<i>Fabaceae</i> (<i>Caesalpiniaceae</i>)	204,231	67
59	<i>Sesbania grandiflora</i>	Agathi	<i>Fabaceae</i>	526, 527, 528	68
60	<i>Spathodea companulata</i>	African Tulip Tree	<i>Bignoniaceae</i>	504, 506, 520, 521, 522, 550, 551, 552, 560	69
61	<i>Swietenia mahogani</i>	Mahogany	<i>Meliaceae</i>	145,146,147,603	70
62	<i>Syzygium cumini</i>	Jamun	<i>Myrtaceae</i>	529, 537	71
63	<i>Tabebuia caraiba</i>	Yellow Tabebuia	<i>Bignoniaceae</i>	334,512, 531, 565, 566,287	72
64	<i>Tabebuia rosea/heterophylla</i>	Pink Tabebuia	<i>Bignoniaceae</i>	513, 514, 515, 516, 517, 555, 557, 559	73
65	<i>Tamarindus indica</i>	Tamarind	<i>Fabaceae</i> (<i>Caesalpiniaceae</i>)	545	74
66	<i>Tecoma stans</i>	Yellow Trumpet Tree	<i>Bignoniaceae</i>	608	75
67	<i>Terminalia catappa</i>	Badam	<i>Combretaceae</i>	294,306,316,317, 330	76
68	<i>Thespesia populnea</i>	Indian Tulip Tree	<i>Malvaceae</i>	508, 575	77

SHRUBS

No.	Scientific name	Common name	Family	GPS ID	Pg
1	<i>Brugmansia suaveolens</i> / <i>Datura suaveolens</i>	Angel's Trumpet	<i>Solanaceae</i>	572	79
2	<i>Brugmansia versicolor</i> / <i>Datura mollis</i>	Peach Angel's Trumpet	<i>Solanaceae</i>	582, 583	80
3	<i>Brunfelsia americana</i>	Lady of the Night	<i>Solanaceae</i>	571, 602	81
4	<i>Caesalpinia pulcherrima</i>	Peacock Flower	<i>Fabaceae</i> (<i>Caesalpinaceae</i>)	511, 530	82
5	<i>Callyandra</i> <i>haematocephala</i>	Powder-puff Plant	<i>Fabaceae</i> (<i>Caesalpinaceae</i>)	574,587	83
6	<i>Ixora coccinea</i>	Exora	<i>Rubiaceae</i>	213, 228, 235, 236, 250, 251	84
7	<i>Magnolia lilifera</i>	Egg Magnolia	<i>Magnoliaceae</i>	523	85
8	<i>Murraya exotica</i>	Kamini	<i>Rutaceae</i>	492, 493, 500, 502	86
9	<i>Mussaenda erythrophylla</i>	Mussaenda (Pink)	<i>Rubiaceae</i>	113,190,192	87
10	<i>Mussaenda philippica</i>	Mussaenda (White), (Yellow)	<i>Rubiaceae</i>	104,112,171,172,173,183,184, 189,191,193,599	88
11	<i>Nerium oleander</i>	Oleander	<i>Apocynaceae</i>	586	89
12	<i>Petrea arborea</i>	Blue Jasmine	<i>Verbenaceae</i>	341,342,343,344,345,346	90
13	<i>Solanum grandiflorum</i>	Potato Tree	<i>Solanaceae</i>	546, 547	91
14	<i>Tabernemontana</i> <i>divaricata</i>	Milkwood	<i>Apocynaceae</i>	605	92

References:

- [1] Kartikeyan, S., *Trees of Bangalore*, <http://www.arvindguptatoys.com/arvindgupta/trees-bangalore.pdf> (29/05/11)
- [2] Cowen, D.V., *Flowering Trees & Shrubs In India*, <http://www.arvindguptatoys.com/arvindgupta/cowen.pdf> (29/05/11)
- [3] http://en.wikipedia.org/wiki/Phyllanthus_emblica (29/05/11)
- [4] <http://en.wikipedia.org/wiki/Banana> (31/05/11)
- [5] <http://en.wikipedia.org/wiki/Banyan> (31/05/11)
- [6] http://en.wikipedia.org/wiki/Crescentia_cujete (2/06/11)
- [7] http://en.wikipedia.org/wiki/Ficus_benjamina (7/6/2011)
- [8] http://en.wikipedia.org/wiki/Bauhinia_variegata (7/6/2011)
- [9] <http://en.wikipedia.org/wiki/Coconut> (7/6/2011)
- [10] http://www.cirrusimage.com/tree_Eucalyptus.htm (8/6/2011)
- [11] http://en.wikipedia.org/wiki/Ixora_coccinea (8/6/2011)
- [12] http://en.wikipedia.org/wiki/Manilkara_zapota (10/7/2011)
- [13] <http://en.wikipedia.org/wiki/Jackfruit> (17/7/2011)
- [14] <http://www.flowersofindia.in/catalog/slides/Java%20Cassia.html> (17/7/2011)
- [15] http://en.wikipedia.org/wiki/Neolamarckia_cadamba (17/7/2011)

- [16] http://en.wikipedia.org/wiki/Lagerstroemia_speciosa (17/7/2011)
- [17] <http://www.tropilab.com/queen-flow.html> (17/7/2011)
- [18] http://en.wikipedia.org/wiki/Polyalthia_longifolia (17/7/2011)
- [19] http://en.wikipedia.org/wiki/Swietenia_mahagoni (18/7/2011)
- [20] <http://dollarstips.com/freebies/mussaenda-erythrophylla-the-colorful-garden-plant/> (20/7/2011)
- [21] http://en.wikipedia.org/wiki/Azadirachta_indica (29/7/2011)
- [22] http://en.wikipedia.org/wiki/Carica_papaya (29/7/2011)
- [23] http://en.wikipedia.org/wiki/Sacred_fig (31/7/2011)
- [24] http://www.nparks.gov.sg/cms/index.php?option=com_content&view=article&id=182&Itemid=161 (31/7/2011)
- [25] http://en.wikipedia.org/wiki/Tabebuia_rosea (31/7/2011)
- [26] http://en.wikipedia.org/wiki/Araucaria_heterophylla (31/7/2011)
- [27] http://en.wikipedia.org/wiki/Santalum_album (31/7/2011)
- [28] http://en.wikipedia.org/wiki/Grevillea_robusta (31/7/2011)
- [29] <http://www.worldagroforestrycentre.org/sea/Products/AFDbases/af/asp/SpeciesInfo.asp?SpID=10> (2/8/2011)
- [30] <http://www.worldagroforestrycentre.org/sea/Products/AFDbases/AF/asp/SpeciesInfo.asp?SpID=1785> (2/8/2011)
- [31] <http://www.flowersofindia.in/catalog/slides/Red%20Sandalwood.html> (2/8/2011)

- [32] <http://www.plantzafrica.com/plantab/bauhintoment.htm> (2/8/2011)
- [33] <http://www.flowersofindia.in/catalog/slides/Scarlet%20Flame%20Bean.html> (2/8/2011)
- [34] <http://ecocrop.fao.org/ecocrop/srv/en/cropView?id=1306> (3/8/2011)
- [35] http://en.wikipedia.org/wiki/Magnolia_grandiflora (3/8/2011)
- [36] Rao, K Sankara, *Flowering plants of Indian Institute of Science: a field guide*, IISc Press, Bangalore, 2009
- [37] <http://www.worldagroforestrycentre.org/Sea/Products/AFDbases/AF/asp/SpeciesInfo.asp?SpID=18085> (4/8/2011)
- [38] <http://www.tropilab.com/malpig-gla.html> (3/8/2011)
- [39] http://en.wikipedia.org/wiki/Mesua_ferrea (5/8/2011)
- [40] <http://www.flowersofindia.in/catalog/slides/Indian%20Cork%20Tree.html> (9/8/2011)
- [41] <http://en.wikipedia.org/wiki/Avocado> (13/8/2011)
- [42] http://en.wikipedia.org/wiki/Pterospermum_acerifolium (13/8/2011)
- [43] http://www.ntbg.org/plants/plant_details.php?rid=2041&plantid=10452 (13/8/2011)
- [44] http://en.wikipedia.org/wiki/Sesbania_grandiflora (13/8/2011)
- [45] <http://en.wikipedia.org/wiki/Spathodea> (13/8/2011)
- [46] <http://www.tropilab.com/spatodea-cam.html> (13/8/2011)
- [47] <http://en.wikipedia.org/wiki/Jambul> (14/8/2011)
- [48] <http://www.flowersofindia.in/catalog/slides/Jamun.html> (14/8/2011)

- [49] <http://en.wikipedia.org/wiki/Tamarind> (14/8/2011)
- [50] <http://www.naturia.per.sg/buloh/plants/portia.htm> (14/8/2011)
- [51] <http://www.answers.com/topic/lime> (10/10/2011)
- [52] http://ag.arizona.edu/pima/gardening/aridplants/Caesalpinia_pulcherrima.html (10/10/2011)
- [53] <http://www.flowersofindia.in/catalog/slides/Kamini.html> (10/10/2011)
- [54] <http://www.inbar.int/publication/txt/tr17/bambusa/banbos.htm> (10/10/2011)
- [55] http://en.wikipedia.org/wiki/Bambusa_vulgaris (10/10/2011)
- [56] <http://www.flowersofindia.in/catalog/slides/Flame%20of%20the%20Forest.html> (10/10/2011)
- [57] <http://www.flowersofindia.in/catalog/slides/Morpankhi.html> (10/10/2011)
- [58] <http://en.wikipedia.org/wiki/Thuja> (10/10/2011)
- [59] <http://www.flowersofindia.in/catalog/slides/White%20Frangipani.html> (10/10/2011)
- [60] <http://www.flowersofindia.in/catalog/slides/Lipstick%20Tree.html> (10/10/2011)
- [61] http://en.wikipedia.org/wiki/Cycas_revoluta (10/10/2011)
- [62] <http://www.flowersofindia.in/catalog/slides/Sago%20Palm.html> (10/10/2011)
- [63] <http://www.worldagroforestrycentre.org/sea/Products/AFDbases/af/asp/SpeciesInfo.asp?SpID=17940> (10/10/2011)
- [64] <http://ayurvedicmedicinalplants.com/plants/434.html> (10/10/2011)

- [65] <http://www.flowersofindia.in/catalog/slides/Yellow%20Bells.html> (10/10/2011)
- [66] http://en.wikipedia.org/wiki/Tecoma_stans (10/10/2011)
- [67] http://en.wikipedia.org/wiki/Brugmansia_suaveolens (11/10/2011)
- [68] http://www.tradewindsfruit.com/orange_angels_trumpet.htm (11/10.2011)
- [69] http://en.wikipedia.org/wiki/Brugmansia_versicolor (11/10/2011)
- [70] <http://www.flowersofindia.in/catalog/slides/Lady%20of%20the%20Night.html> (11/10/2011)
- [71] <http://www.flowersofindia.in/catalog/slides/Oleander.html> (11/10/2011)
- [72] <http://en.wikipedia.org/wiki/Tabernaemontana> (11/10/2011)
- [73] <http://www.horticultureworld.net/botany-taxonomy.htm> (11/10/2011)
- [74] <http://www.about-garden.com/a/en/2427-ficus-benamina-starlight-weeping-fig/> (14/10/2011)
- [75] <http://apps.rhs.org.uk/plantselector/plant?plantid=2938> (14/10/2011)
- [76] http://toptropicals.com/catalog/uid/Cassia_spectabilis.htm (14/10/2011)
- [77] <http://edis.ifas.ufl.edu/st588> (14/10/2011)

***** WAYPOINTS *****

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00031	076	13.0288942000000	77.5630171000000	000936.20	00/00/00 00:00:00	03-MAY-11 11:36:11AM	048	03	000.0
00032	077	13.0288478000000	77.5630177000000	000937.16	00/00/00 00:00:00	03-MAY-11 11:36:55AM	048	03	000.0
00033	078	13.0288306000000	77.5629819000000	000937.16	00/00/00 00:00:00	03-MAY-11 11:37:17AM	048	03	000.0
00034	079	13.0288125000000	77.5630918000000	000937.40	00/00/00 00:00:00	03-MAY-11 11:37:46AM	048	03	000.0
00035	080	13.0288264000000	77.5630774000000	000937.64	00/00/00 00:00:00	03-MAY-11 11:38:05AM	048	03	000.0
00036	081	13.0288178000000	77.5631560000000	000937.88	00/00/00 00:00:00	03-MAY-11 11:38:28AM	048	03	000.0
00037	082	13.0288159000000	77.5632409000000	000938.13	00/00/00 00:00:00	03-MAY-11 11:38:42AM	048	03	000.0
00038	083	13.0288926000000	77.5632986000000	000937.64	00/00/00 00:00:00	03-MAY-11 11:39:07AM	048	03	000.0
00039	084	13.0289160000000	77.5633303000000	000937.16	00/00/00 00:00:00	03-MAY-11 11:39:21AM	048	03	000.0
00040	085	13.0288668000000	77.5633651000000	000937.40	00/00/00 00:00:00	03-MAY-11 11:39:41AM	048	03	000.0
00041	086	13.0288341000000	77.5633064000000	000937.88	00/00/00 00:00:00	03-MAY-11 11:40:05AM	048	03	000.0
00042	087	13.0288292000000	77.5633747000000	000938.37	00/00/00 00:00:00	03-MAY-11 11:40:26AM	048	03	000.0
00043	088	13.0288587000000	77.5633902000000	000938.37	00/00/00 00:00:00	03-MAY-11 11:40:42AM	048	03	000.0
00044	089	13.0288716000000	77.5634153000000	000938.37	00/00/00 00:00:00	03-MAY-11 11:40:53AM	048	03	000.0
00045	090	13.0289855000000	77.5633824000000	000938.13	00/00/00 00:00:00	03-MAY-11 11:41:19AM	048	03	000.0
00046	091	13.0289288000000	77.5634896000000	000938.13	00/00/00 00:00:00	03-MAY-11 11:41:38AM	048	03	000.0
00047	092	13.0288127000000	77.5634746000000	000939.09	00/00/00 00:00:00	03-MAY-11 11:41:55AM	048	03	000.0
00048	093	13.0288350000000	77.5635516000000	000939.09	00/00/00 00:00:00	03-MAY-11 11:42:28AM	048	03	000.0
00049	094	13.0288215000000	77.5635723000000	000939.57	00/00/00 00:00:00	03-MAY-11 11:42:40AM	048	03	000.0
00050	095	13.0288113000000	77.5636393000000	000939.33	00/00/00 00:00:00	03-MAY-11 11:42:55AM	048	03	000.0
00051	096	13.0288147000000	77.5636722000000	000939.57	00/00/00 00:00:00	03-MAY-11 11:43:05AM	048	03	000.0
00052	097	13.0288281000000	77.5637180000000	000939.57	00/00/00 00:00:00	03-MAY-11 11:43:17AM	048	03	000.0
00053	098	13.0288325000000	77.5638567000000	000939.57	00/00/00 00:00:00	03-MAY-11 11:43:53AM	048	03	000.0
00054	099	13.0288660000000	77.5639471000000	000939.09	00/00/00 00:00:00	03-MAY-11 11:44:32AM	048	03	000.0
00055	100	13.0288670000000	77.5639392000000	000939.57	00/00/00 00:00:00	03-MAY-11 11:44:43AM	048	03	000.0
00056	101	13.0288540000000	77.5639546000000	000940.05	00/00/00 00:00:00	03-MAY-11 11:45:03AM	048	03	000.0
00057	102	13.0288595000000	77.5639921000000	000940.29	00/00/00 00:00:00	03-MAY-11 11:45:16AM	048	03	000.0

00058	103	13.0288609000000	77.5639941000000	000939.81	00/00/00 00:00:00	03-MAY-11 11:45:22AM	048	03	000.0
00059	104	13.0289145000000	77.5640257000000	000940.53	00/00/00 00:00:00	03-MAY-11 11:45:38AM	048	03	000.0
00060	105	13.0289140000000	77.5640334000000	000939.81	00/00/00 00:00:00	03-MAY-11 11:45:47AM	048	03	000.0
00061	106	13.0288897000000	77.5640781000000	000940.05	00/00/00 00:00:00	03-MAY-11 11:46:03AM	048	03	000.0
00062	107	13.0289001000000	77.5641427000000	000940.29	00/00/00 00:00:00	03-MAY-11 11:46:24AM	048	03	000.0
00063	108	13.0289442000000	77.5641383000000	000940.29	00/00/00 00:00:00	03-MAY-11 11:46:38AM	048	03	000.0
00064	109	13.0288560000000	77.5641657000000	000940.77	00/00/00 00:00:00	03-MAY-11 11:47:07AM	048	03	000.0
00065	111	13.0289219000000	77.5639610000000	000942.21	00/00/00 00:00:00	03-MAY-11 11:49:38AM	048	03	000.0
00066	112	13.0292966000000	77.5640485000000	000942.93	00/00/00 00:00:00	03-MAY-11 11:50:33AM	048	03	000.0
00067	113	13.0293828000000	77.5641143000000	000942.45	00/00/00 00:00:00	03-MAY-11 11:50:50AM	048	03	000.0
00068	114	13.0293845000000	77.5641578000000	000942.69	00/00/00 00:00:00	03-MAY-11 11:51:01AM	048	03	000.0
00069	115	13.0295459000000	77.5641526000000	000942.69	00/00/00 00:00:00	03-MAY-11 11:51:35AM	048	03	000.0
00070	116	13.0295181000000	77.5642450000000	000942.45	00/00/00 00:00:00	03-MAY-11 11:51:51AM	048	03	000.0
00071	117	13.0294992000000	77.5643244000000	000941.97	00/00/00 00:00:00	03-MAY-11 11:52:09AM	048	03	000.0
00072	118	13.0294765000000	77.5643966000000	000941.97	00/00/00 00:00:00	03-MAY-11 11:52:32AM	048	03	000.0
00073	119	13.0294635000000	77.5644327000000	000941.97	00/00/00 00:00:00	03-MAY-11 11:52:43AM	048	03	000.0
00074	120	13.0296288000000	77.5640231000000	000942.69	00/00/00 00:00:00	03-MAY-11 11:53:43AM	048	03	000.0
00075	121	13.0297133000000	77.5638061000000	000943.17	00/00/00 00:00:00	03-MAY-11 11:54:14AM	048	03	000.0
00076	123	13.0294018000000	77.5635557000000	000943.17	00/00/00 00:00:00	03-MAY-11 11:55:30AM	048	03	000.0
00077	124	13.0292708000000	77.5634875000000	000943.17	00/00/00 00:00:00	03-MAY-11 11:55:52AM	048	03	000.0
00078	126	13.0292029000000	77.5638200000000	000943.17	00/00/00 00:00:00	03-MAY-11 11:58:33AM	048	03	000.0
00079	127	13.0292032000000	77.5638418000000	000943.89	00/00/00 00:00:00	03-MAY-11 11:58:54AM	048	03	000.0
00080	128	13.0291087000000	77.5638662000000	000943.17	00/00/00 00:00:00	03-MAY-11 11:59:11AM	048	03	000.0
00081	129	13.0290993000000	77.5638973000000	000943.41	00/00/00 00:00:00	03-MAY-11 11:59:25AM	048	03	000.0
00082	130	13.0291080000000	77.5638338000000	000943.65	00/00/00 00:00:00	03-MAY-11 11:59:39AM	048	03	000.0
00083	131	13.0292387000000	77.5635800000000	000943.41	00/00/00 00:00:00	03-MAY-11 12:00:13PM	048	03	000.0
00084	132	13.0292416000000	77.5635493000000	000943.17	00/00/00 00:00:00	03-MAY-11 12:00:21PM	048	03	000.0
00085	133	13.0292680000000	77.5634878000000	000943.41	00/00/00 00:00:00	03-MAY-11 12:00:45PM	048	03	000.0
00086	134	13.0292689000000	77.5634614000000	000943.17	00/00/00 00:00:00	03-MAY-11 12:00:49PM	048	03	000.0
00087	135	13.0292573000000	77.5633725000000	000943.65	00/00/00 00:00:00	03-MAY-11 12:01:02PM	048	03	000.0
00088	136	13.0292945000000	77.5633601000000	000943.41	00/00/00 00:00:00	03-MAY-11 12:01:23PM	048	03	000.0
00089	137	13.0293690000000	77.5633658000000	000943.41	00/00/00 00:00:00	03-MAY-11 12:01:36PM	048	03	000.0
00090	139	13.0294202000000	77.5633344000000	000943.17	00/00/00 00:00:00	03-MAY-11 12:01:59PM	048	03	000.0
00091	140	13.0294869000000	77.5633244000000	000942.69	00/00/00 00:00:00	03-MAY-11 12:02:11PM	048	03	000.0
00092	141	13.0294695000000	77.5632748000000	000943.41	00/00/00 00:00:00	03-MAY-11 12:02:30PM	048	03	000.0
00093	142	13.0295370000000	77.5632916000000	000944.37	00/00/00 00:00:00	03-MAY-11 12:03:10PM	048	03	000.0
00094	143	13.0292836000000	77.5632721000000	000943.89	00/00/00 00:00:00	03-MAY-11 12:03:51PM	048	03	000.0
00095	144	13.0291857000000	77.5632112000000	000944.37	00/00/00 00:00:00	03-MAY-11 12:04:16PM	048	03	000.0
00096	145	13.0288815000000	77.5641863000000	000943.65	00/00/00 00:00:00	04-MAY-11 10:51:09AM	048	03	000.0
00097	146	13.0288165000000	77.5641481000000	000943.89	00/00/00 00:00:00	04-MAY-11 10:51:33AM	048	03	000.0
00098	147	13.0288565000000	77.5639071000000	000943.65	00/00/00 00:00:00	04-MAY-11 10:52:23AM	048	03	000.0
00099	148	13.0288746000000	77.5629721000000	000943.41	00/00/00 00:00:00	04-MAY-11 10:59:00AM	048	03	000.0
00100	149	13.0288681000000	77.5629868000000	000943.17	00/00/00 00:00:00	04-MAY-11 10:59:10AM	048	03	000.0
00101	150	13.0288792000000	77.5630354000000	000941.49	00/00/00 00:00:00	04-MAY-11 10:59:21AM	048	03	000.0
00102	151	13.0288755000000	77.5630492000000	000943.17	00/00/00 00:00:00	04-MAY-11 10:59:35AM	048	03	000.0
00103	152	13.0288599000000	77.5630949000000	000943.41	00/00/00 00:00:00	04-MAY-11 10:59:45AM	048	03	000.0
00104	153	13.0288623000000	77.5631293000000	000943.41	00/00/00 00:00:00	04-MAY-11 10:59:54AM	048	03	000.0
00105	154	13.0288471000000	77.5631634000000	000943.65	00/00/00 00:00:00	04-MAY-11 11:00:03AM	048	03	000.0
00106	155	13.0288345000000	77.5631891000000	000943.41	00/00/00 00:00:00	04-MAY-11 11:00:13AM	048	03	000.0
00107	156	13.0288255000000	77.5631920000000	000943.41	00/00/00 00:00:00	04-MAY-11 11:00:24AM	048	03	000.0
00108	157	13.0288085000000	77.5632446000000	000943.17	00/00/00 00:00:00	04-MAY-11 11:00:38AM	048	03	000.0
00109	158	13.0288366000000	77.5632959000000	000943.17	00/00/00 00:00:00	04-MAY-11 11:00:50AM	048	03	000.0
00110	159	13.0288101000000	77.5633198000000	000943.65	00/00/00 00:00:00	04-MAY-11 11:01:11AM	048	03	000.0
00111	160	13.0288139000000	77.5633292000000	000943.65	00/00/00 00:00:00	04-MAY-11 11:01:23AM	048	03	000.0
00112	161	13.0288105000000	77.5633273000000	000943.89	00/00/00 00:00:00	04-MAY-11 11:01:37AM	048	03	000.0
00113	162	13.0288140000000	77.5633434000000	000944.13	00/00/00 00:00:00	04-MAY-11 11:01:50AM	048	03	000.0
00114	163	13.0287802000000	77.5633908000000	000943.41	00/00/00 00:00:00	04-MAY-11 11:02:01AM	048	03	000.0
00115	164	13.0293017000000	77.5631011000000	000944.61	00/00/00 00:00:00	04-MAY-11 11:04:44AM	048	03	000.0
00116	165	13.0292523000000	77.5632237000000	000944.13	00/00/00 00:00:00	04-MAY-11 11:05:17AM	048	03	000.0

00117	166	13.0295518000000	77.5632119000000	000944.13	00/00/00 00:00:00	04-MAY-11 11:06:32AM	048	03	000.0
00118	167	13.0297267000000	77.5632580000000	000945.09	00/00/00 00:00:00	04-MAY-11 11:07:43AM	048	03	000.0
00119	168	13.0298090000000	77.5631571000000	000943.17	00/00/00 00:00:00	04-MAY-11 11:08:49AM	048	03	000.0
00120	169	13.0297568000000	77.5630863000000	000943.65	00/00/00 00:00:00	04-MAY-11 11:09:11AM	048	03	000.0
00121	170	13.0292557000000	77.5632536000000	000952.30	00/00/00 00:00:00	04-MAY-11 12:31:19PM	048	03	000.0
00122	171	13.0292048000000	77.5632401000000	000951.34	00/00/00 00:00:00	04-MAY-11 12:31:34PM	048	03	000.0
00123	172	13.0290927000000	77.5630109000000	000953.03	00/00/00 00:00:00	04-MAY-11 12:32:14PM	048	03	000.0
00124	173	13.0290900000000	77.5629603000000	000951.34	00/00/00 00:00:00	04-MAY-11 12:32:27PM	048	03	000.0
00125	175	13.0289733000000	77.5625899000000	000950.14	00/00/00 00:00:00	04-MAY-11 12:37:34PM	048	03	000.0
00126	176	13.0288501000000	77.5626162000000	000949.90	00/00/00 00:00:00	04-MAY-11 12:38:21PM	048	03	000.0
00127	177	13.0288707000000	77.5626634000000	000949.66	00/00/00 00:00:00	04-MAY-11 12:38:36PM	048	03	000.0
00128	178	13.0288984000000	77.5626784000000	000949.18	00/00/00 00:00:00	04-MAY-11 12:39:04PM	048	03	000.0
00129	179	13.0288974000000	77.5626698000000	000949.42	00/00/00 00:00:00	04-MAY-11 12:39:14PM	048	03	000.0
00130	183	13.0289226000000	77.5634181000000	000949.90	00/00/00 00:00:00	04-MAY-11 12:42:19PM	048	03	000.0
00131	184	13.0289156000000	77.5634834000000	000949.42	00/00/00 00:00:00	04-MAY-11 12:42:33PM	048	03	000.0
00132	185	13.0288393000000	77.5637360000000	000950.62	00/00/00 00:00:00	04-MAY-11 12:43:04PM	048	03	000.0
00133	186	13.0288590000000	77.5637837000000	000950.86	00/00/00 00:00:00	04-MAY-11 12:43:20PM	048	03	000.0
00134	187	13.0288381000000	77.5639703000000	000950.86	00/00/00 00:00:00	04-MAY-11 12:43:55PM	048	03	000.0
00135	188	13.0288429000000	77.5641144000000	000951.10	00/00/00 00:00:00	04-MAY-11 12:44:40PM	048	03	000.0
00136	189	13.0293235000000	77.5641799000000	000950.38	00/00/00 00:00:00	04-MAY-11 12:46:26PM	048	03	000.0
00137	190	13.0293512000000	77.5641893000000	000948.22	00/00/00 00:00:00	04-MAY-11 12:46:34PM	048	03	000.0
00138	191	13.0293358000000	77.5643102000000	000949.66	00/00/00 00:00:00	04-MAY-11 12:46:55PM	048	03	000.0
00139	192	13.0293415000000	77.5643164000000	000949.90	00/00/00 00:00:00	04-MAY-11 12:46:58PM	048	03	000.0
00140	193	13.0293362000000	77.5643217000000	000950.14	00/00/00 00:00:00	04-MAY-11 12:47:12PM	048	03	000.0
00141	194	13.0297100000000	77.5637558000000	000948.94	00/00/00 00:00:00	04-MAY-11 12:48:53PM	048	03	000.0
00142	195	13.0297325000000	77.5636442000000	000948.46	00/00/00 00:00:00	04-MAY-11 12:49:20PM	048	03	000.0
00143	196	13.0298628000000	77.5634121000000	000947.26	00/00/00 00:00:00	04-MAY-11 12:50:02PM	048	03	000.0
00144	197	13.0298060000000	77.5635545000000	000947.26	00/00/00 00:00:00	04-MAY-11 12:50:31PM	048	03	000.0
00145	198	13.0296624000000	77.5630843000000	000947.02	00/00/00 00:00:00	04-MAY-11 12:51:52PM	048	03	000.0
00146	199	13.0293652000000	77.5636030000000	000947.98	00/00/00 00:00:00	04-MAY-11 12:53:32PM	048	03	000.0
00147	200	13.0293242000000	77.5636300000000	000947.74	00/00/00 00:00:00	04-MAY-11 12:53:45PM	048	03	000.0
00148	201	13.0293289000000	77.5629779000000	000943.65	00/00/00 00:00:00	05-MAY-11 10:53:14AM	048	03	000.0
00149	202	13.0293164000000	77.5629819000000	000945.09	00/00/00 00:00:00	05-MAY-11 10:54:01AM	048	03	000.0
00150	203	13.0294690000000	77.5629384000000	000944.13	00/00/00 00:00:00	05-MAY-11 10:59:57AM	048	03	000.0
00151	204	13.0297204000000	77.5633437000000	000944.13	00/00/00 00:00:00	05-MAY-11 11:02:25AM	048	03	000.0
00152	205	13.0295086000000	77.5634351000000	000944.61	00/00/00 00:00:00	05-MAY-11 11:03:14AM	048	03	000.0
00153	206	13.0294747000000	77.5634221000000	000944.37	00/00/00 00:00:00	05-MAY-11 11:03:49AM	048	03	000.0
00154	207	13.0292716000000	77.5634494000000	000944.85	00/00/00 00:00:00	05-MAY-11 11:05:26AM	048	03	000.0
00155	208	13.0292889000000	77.5634688000000	000944.13	00/00/00 00:00:00	05-MAY-11 11:06:02AM	048	03	000.0
00156	209	13.0289717000000	77.5625506000000	000942.93	00/00/00 00:00:00	05-MAY-11 11:09:04AM	048	03	000.0
00157	210	13.0289524000000	77.5625480000000	000942.21	00/00/00 00:00:00	05-MAY-11 11:09:52AM	048	03	000.0
00158	211	13.0289123000000	77.5625432000000	000942.93	00/00/00 00:00:00	05-MAY-11 11:10:37AM	048	03	000.0
00159	212	13.0287998000000	77.5624207000000	000942.21	00/00/00 00:00:00	05-MAY-11 11:11:34AM	048	03	000.0
00160	213	13.0287967000000	77.5624430000000	000942.45	00/00/00 00:00:00	05-MAY-11 11:11:57AM	048	03	000.0
00161	214	13.0288396000000	77.5624233000000	000942.69	00/00/00 00:00:00	05-MAY-11 11:12:27AM	048	03	000.0
00162	215	13.0288814000000	77.5624561000000	000942.45	00/00/00 00:00:00	05-MAY-11 11:12:56AM	048	03	000.0
00163	216	13.0287866000000	77.5624348000000	000942.93	00/00/00 00:00:00	05-MAY-11 11:13:42AM	048	03	000.0
00164	217	13.0288885000000	77.5624380000000	000943.65	00/00/00 00:00:00	05-MAY-11 11:14:25AM	048	03	000.0
00165	218	13.0289146000000	77.5624258000000	000942.93	00/00/00 00:00:00	05-MAY-11 11:15:02AM	048	03	000.0
00166	219	13.0289106000000	77.5624177000000	000943.41	00/00/00 00:00:00	05-MAY-11 11:15:27AM	048	03	000.0
00167	220	13.0289701000000	77.5624248000000	000943.17	00/00/00 00:00:00	05-MAY-11 11:16:06AM	048	03	000.0
00168	221	13.0289562000000	77.5624249000000	000943.41	00/00/00 00:00:00	05-MAY-11 11:16:35AM	048	03	000.0
00169	222	13.0289320000000	77.5624686000000	000943.17	00/00/00 00:00:00	05-MAY-11 11:17:15AM	048	03	000.0
00170	223	13.0289398000000	77.5624587000000	000943.89	00/00/00 00:00:00	05-MAY-11 11:17:45AM	048	03	000.0
00171	224	13.0289496000000	77.5624680000000	000943.17	00/00/00 00:00:00	05-MAY-11 11:18:03AM	048	03	000.0
00172	225	13.0289662000000	77.5624590000000	000943.41	00/00/00 00:00:00	05-MAY-11 11:18:27AM	048	03	000.0
00173	226	13.0289541000000	77.5627995000000	000943.65	00/00/00 00:00:00	05-MAY-11 11:21:27AM	048	03	000.0
00174	227	13.0288939000000	77.5627874000000	000943.17	00/00/00 00:00:00	05-MAY-11 11:21:51AM	048	03	000.0
00175	228	13.0288859000000	77.5627481000000	000943.17	00/00/00 00:00:00	05-MAY-11 11:22:54AM	048	03	000.0

00176	229	13.0288877000000	77.5627184000000	000942.69	00/00/00 00:00:00	05-MAY-11 11:23:20AM	048	03	000.0
00177	230	13.0288113000000	77.5627548000000	000942.93	00/00/00 00:00:00	05-MAY-11 11:24:24AM	048	03	000.0
00178	231	13.0291821000000	77.5624640000000	000943.17	00/00/00 00:00:00	05-MAY-11 11:27:26AM	048	03	000.0
00179	232	13.0291579000000	77.5627224000000	000943.17	00/00/00 00:00:00	05-MAY-11 11:29:13AM	048	03	000.0
00180	233	13.0291607000000	77.5626522000000	000942.93	00/00/00 00:00:00	05-MAY-11 11:30:07AM	048	03	000.0
00181	234	13.0291758000000	77.5626710000000	000942.69	00/00/00 00:00:00	05-MAY-11 11:30:24AM	048	03	000.0
00182	235	13.0292615000000	77.5637853000000	000944.13	00/00/00 00:00:00	05-MAY-11 11:33:28AM	048	03	000.0
00183	236	13.0292796000000	77.5639419000000	000943.65	00/00/00 00:00:00	05-MAY-11 11:34:43AM	048	03	000.0
00184	237	13.0289588000000	77.5640273000000	000943.65	00/00/00 00:00:00	05-MAY-11 11:39:01AM	048	03	000.0
00185	238	13.0288725000000	77.5639546000000	000944.13	00/00/00 00:00:00	05-MAY-11 11:40:08AM	048	03	000.0
00186	239	13.0288875000000	77.5638993000000	000944.37	00/00/00 00:00:00	05-MAY-11 11:41:03AM	048	03	000.0
00187	240	13.0288999000000	77.5640779000000	000945.09	00/00/00 00:00:00	05-MAY-11 11:42:34AM	048	03	000.0
00188	241	13.0288584000000	77.5644268000000	000945.82	00/00/00 00:00:00	05-MAY-11 11:44:14AM	048	03	000.0
00189	242	13.0288855000000	77.5644418000000	000945.34	00/00/00 00:00:00	05-MAY-11 11:44:47AM	048	03	000.0
00190	243	13.0288288000000	77.5644479000000	000945.82	00/00/00 00:00:00	05-MAY-11 11:45:26AM	048	03	000.0
00191	244	13.0288383000000	77.5644283000000	000945.82	00/00/00 00:00:00	05-MAY-11 11:45:58AM	048	03	000.0
00192	245	13.0289015000000	77.5644754000000	000945.34	00/00/00 00:00:00	05-MAY-11 11:46:52AM	048	03	000.0
00193	246	13.0289693000000	77.5645635000000	000946.30	00/00/00 00:00:00	05-MAY-11 11:47:34AM	048	03	000.0
00194	247	13.0290179000000	77.5645756000000	000946.06	00/00/00 00:00:00	05-MAY-11 11:47:57AM	048	03	000.0
00195	248	13.0290332000000	77.5645585000000	000945.82	00/00/00 00:00:00	05-MAY-11 11:48:23AM	048	03	000.0
00196	249	13.0290622000000	77.5645498000000	000945.58	00/00/00 00:00:00	05-MAY-11 11:48:50AM	048	03	000.0
00197	250	13.0290228000000	77.5639623000000	000946.54	00/00/00 00:00:00	05-MAY-11 11:50:36AM	048	03	000.0
00198	251	13.0290952000000	77.5637257000000	000946.54	00/00/00 00:00:00	05-MAY-11 11:51:43AM	048	03	000.0
00199	252	13.0291123000000	77.5624888000000	000946.06	00/00/00 00:00:00	05-MAY-11 11:54:08AM	048	03	000.0
00200	253	13.0288170000000	77.5624842000000	000945.82	00/00/00 00:00:00	05-MAY-11 11:55:38AM	048	03	000.0
00201	254	13.0288683000000	77.5628239000000	000946.54	00/00/00 00:00:00	05-MAY-11 11:56:34AM	048	03	000.0
00202	255	13.0288890000000	77.5633629000000	000946.78	00/00/00 00:00:00	05-MAY-11 11:57:49AM	048	03	000.0
00203	256	13.0289614000000	77.5639912000000	000947.26	00/00/00 00:00:00	05-MAY-11 11:59:03AM	048	03	000.0
00204	257	13.0289181000000	77.5645340000000	000947.26	00/00/00 00:00:00	05-MAY-11 12:00:44PM	048	03	000.0
00205	258	13.0290421000000	77.5645318000000	000948.22	00/00/00 00:00:00	05-MAY-11 12:02:24PM	048	03	000.0
00206	259	13.0295760000000	77.5640679000000	000947.74	00/00/00 00:00:00	05-MAY-11 12:04:07PM	048	03	000.0
00207	260	13.0293932000000	77.5641276000000	000947.98	00/00/00 00:00:00	05-MAY-11 12:04:58PM	048	03	000.0
00208	261	13.0293811000000	77.5641102000000	000948.22	00/00/00 00:00:00	05-MAY-11 12:05:34PM	048	03	000.0
00209	262	13.0292481000000	77.5639439000000	000947.74	00/00/00 00:00:00	05-MAY-11 12:06:51PM	048	03	000.0
00210	263	13.0291149000000	77.5638046000000	000947.02	00/00/00 00:00:00	05-MAY-11 12:07:16PM	048	03	000.0
00211	264	13.0291993000000	77.5636310000000	000947.50	00/00/00 00:00:00	05-MAY-11 12:08:19PM	048	03	000.0
00212	265	13.0292300000000	77.5636056000000	000947.74	00/00/00 00:00:00	05-MAY-11 12:08:55PM	048	03	000.0
00213	266	13.0293983000000	77.5637036000000	000947.50	00/00/00 00:00:00	05-MAY-11 12:09:38PM	048	03	000.0
00214	267	13.0291167000000	77.5633906000000	000945.82	00/00/00 00:00:00	05-MAY-11 12:10:53PM	048	03	000.0
00215	268	13.0298816000000	77.5631263000000	000946.54	00/00/00 00:00:00	05-MAY-11 12:12:51PM	048	03	000.0
00216	269	13.0298530000000	77.5631411000000	000947.02	00/00/00 00:00:00	05-MAY-11 12:13:04PM	048	03	000.0
00217	270	13.0294641000000	77.5630532000000	000947.26	00/00/00 00:00:00	05-MAY-11 12:13:58PM	048	03	000.0
00218	271	13.0296495000000	77.5629602000000	000947.02	00/00/00 00:00:00	05-MAY-11 12:14:50PM	048	03	000.0
00219	272	13.0296003000000	77.5628545000000	000947.74	00/00/00 00:00:00	05-MAY-11 12:15:29PM	048	03	000.0
00220	273	13.0294699000000	77.5626858000000	000948.22	00/00/00 00:00:00	05-MAY-11 12:16:19PM	048	03	000.0
00221	274	13.0294535000000	77.5626353000000	000948.46	00/00/00 00:00:00	05-MAY-11 12:17:49PM	048	03	000.0
00222	275	13.0294541000000	77.5626349000000	000948.22	00/00/00 00:00:00	05-MAY-11 12:18:31PM	048	03	000.0
00223	276	13.0294627000000	77.5627220000000	000948.70	00/00/00 00:00:00	05-MAY-11 12:19:25PM	048	03	000.0
00224	277	13.0293941000000	77.5627343000000	000948.70	00/00/00 00:00:00	05-MAY-11 12:19:44PM	048	03	000.0
00225	278	13.0291392000000	77.5628506000000	000947.98	00/00/00 00:00:00	05-MAY-11 12:20:30PM	048	03	000.0
00226	279	13.0298779000000	77.5633201000000	000944.37	00/00/00 00:00:00	05-MAY-11 12:49:46PM	048	03	000.0
00227	280	13.0292304000000	77.5635883000000	000944.85	00/00/00 00:00:00	05-MAY-11 12:51:45PM	048	03	000.0
00228	281	13.0290879000000	77.5638050000000	000944.37	00/00/00 00:00:00	05-MAY-11 12:53:15PM	048	03	000.0
00229	282	13.0293142000000	77.5633533000000	000942.21	00/00/00 00:00:00	06-MAY-11 9:48:40AM	048	03	000.0
00230	283	13.0296427000000	77.5634856000000	000942.45	00/00/00 00:00:00	06-MAY-11 9:49:59AM	048	03	000.0
00231	284	13.0295476000000	77.5634610000000	000942.45	00/00/00 00:00:00	06-MAY-11 9:51:11AM	048	03	000.0
00232	285	13.0292377000000	77.5636124000000	000943.17	00/00/00 00:00:00	06-MAY-11 9:51:59AM	048	03	000.0
00233	286	13.0294427000000	77.5635906000000	000943.17	00/00/00 00:00:00	06-MAY-11 9:53:25AM	048	03	000.0
00234	287	13.0295234000000	77.5635519000000	000942.21	00/00/00 00:00:00	06-MAY-11 9:54:12AM	048	03	000.0

00235	288	13.0294874000000	77.5634888000000	000943.65	00/00/00 00:00:00	06-MAY-11 9:54:38AM	048	03	000.0
00236	289	13.0294716000000	77.5634894000000	000942.93	00/00/00 00:00:00	06-MAY-11 9:55:01AM	048	03	000.0
00237	290	13.0294178000000	77.5634813000000	000943.89	00/00/00 00:00:00	06-MAY-11 9:55:14AM	048	03	000.0
00238	291	13.0294091000000	77.5634782000000	000943.17	00/00/00 00:00:00	06-MAY-11 9:55:31AM	048	03	000.0
00239	292	13.0294049000000	77.5634738000000	000943.17	00/00/00 00:00:00	06-MAY-11 9:55:41AM	048	03	000.0
00240	293	13.0293890000000	77.5634515000000	000943.65	00/00/00 00:00:00	06-MAY-11 9:56:06AM	048	03	000.0
00241	294	13.0294911000000	77.5633965000000	000943.17	00/00/00 00:00:00	06-MAY-11 9:57:12AM	048	03	000.0
00242	295	13.0295504000000	77.5633927000000	000942.69	00/00/00 00:00:00	06-MAY-11 9:57:25AM	048	03	000.0
00243	296	13.0298215000000	77.5631959000000	000942.45	00/00/00 00:00:00	06-MAY-11 9:59:18AM	048	03	000.0
00244	297	13.0292466000000	77.5631314000000	000943.89	00/00/00 00:00:00	06-MAY-11 10:01:21AM	048	03	000.0
00245	298	13.0292337000000	77.5630896000000	000944.37	00/00/00 00:00:00	06-MAY-11 10:01:36AM	048	03	000.0
00246	299	13.0292925000000	77.5630040000000	000943.17	00/00/00 00:00:00	06-MAY-11 10:02:50AM	048	03	000.0
00247	300	13.0289165000000	77.5633156000000	000944.13	00/00/00 00:00:00	06-MAY-11 10:04:08AM	048	03	000.0
00248	301	13.0289013000000	77.5632861000000	000943.89	00/00/00 00:00:00	06-MAY-11 10:04:37AM	048	03	000.0
00249	302	13.0288984000000	77.5632165000000	000944.13	00/00/00 00:00:00	06-MAY-11 10:04:58AM	048	03	000.0
00250	303	13.0289462000000	77.5634003000000	000944.37	00/00/00 00:00:00	06-MAY-11 10:05:44AM	048	03	000.0
00251	304	13.0289341000000	77.5634247000000	000944.13	00/00/00 00:00:00	06-MAY-11 10:06:01AM	048	03	000.0
00252	305	13.0289490000000	77.5634655000000	000944.37	00/00/00 00:00:00	06-MAY-11 10:06:13AM	048	03	000.0
00253	306	13.0289198000000	77.5635352000000	000945.34	00/00/00 00:00:00	06-MAY-11 10:07:02AM	048	03	000.0
00254	307	13.0288735000000	77.5642619000000	000944.13	00/00/00 00:00:00	06-MAY-11 10:09:01AM	048	03	000.0
00255	308	13.0288605000000	77.5644011000000	000944.85	00/00/00 00:00:00	06-MAY-11 10:09:54AM	048	03	000.0
00256	309	13.0291163000000	77.5645235000000	000944.85	00/00/00 00:00:00	06-MAY-11 10:10:55AM	048	03	000.0
00257	310	13.0291915000000	77.5645459000000	000944.37	00/00/00 00:00:00	06-MAY-11 10:12:28AM	048	03	000.0
00258	311	13.0292532000000	77.5645398000000	000944.85	00/00/00 00:00:00	06-MAY-11 10:12:47AM	048	03	000.0
00259	312	13.0293074000000	77.5645328000000	000944.85	00/00/00 00:00:00	06-MAY-11 10:13:03AM	048	03	000.0
00260	313	13.0293171000000	77.5645452000000	000944.37	00/00/00 00:00:00	06-MAY-11 10:13:16AM	048	03	000.0
00261	314	13.0293280000000	77.5645562000000	000944.61	00/00/00 00:00:00	06-MAY-11 10:13:27AM	048	03	000.0
00262	315	13.0294789000000	77.5643215000000	000943.89	00/00/00 00:00:00	06-MAY-11 10:14:35AM	048	03	000.0
00263	316	13.0288694000000	77.5627844000000	000944.13	00/00/00 00:00:00	06-MAY-11 10:18:46AM	048	03	000.0
00264	317	13.0288689000000	77.5627502000000	000944.37	00/00/00 00:00:00	06-MAY-11 10:19:13AM	048	03	000.0
00265	318	13.0288808000000	77.5627222000000	000944.13	00/00/00 00:00:00	06-MAY-11 10:19:45AM	048	03	000.0
00266	319	13.0288797000000	77.5626443000000	000943.89	00/00/00 00:00:00	06-MAY-11 10:20:02AM	048	03	000.0
00267	320	13.0293058000000	77.5625584000000	000943.89	00/00/00 00:00:00	06-MAY-11 10:21:38AM	048	03	000.0
00268	321	13.0294173000000	77.5626172000000	000942.93	00/00/00 00:00:00	06-MAY-11 10:22:18AM	048	03	000.0
00269	322	13.0294918000000	77.5626771000000	000942.93	00/00/00 00:00:00	06-MAY-11 10:23:04AM	048	03	000.0
00270	323	13.0295751000000	77.5627115000000	000943.89	00/00/00 00:00:00	06-MAY-11 10:23:44AM	048	03	000.0
00271	324	13.0295986000000	77.5627137000000	000943.17	00/00/00 00:00:00	06-MAY-11 10:24:01AM	048	03	000.0
00272	325	13.0295984000000	77.5627736000000	000943.41	00/00/00 00:00:00	06-MAY-11 10:24:13AM	048	03	000.0
00273	326	13.0296051000000	77.5627804000000	000943.65	00/00/00 00:00:00	06-MAY-11 10:24:28AM	048	03	000.0
00274	327	13.0296241000000	77.5628330000000	000943.41	00/00/00 00:00:00	06-MAY-11 10:25:01AM	048	03	000.0
00275	328	13.0296376000000	77.5628402000000	000943.17	00/00/00 00:00:00	06-MAY-11 10:25:13AM	048	03	000.0
00276	329	13.0296427000000	77.5628941000000	000943.17	00/00/00 00:00:00	06-MAY-11 10:25:30AM	048	03	000.0
00277	330	13.0296666000000	77.5628974000000	000942.93	00/00/00 00:00:00	06-MAY-11 10:25:57AM	048	03	000.0
00278	331	13.0296796000000	77.5629124000000	000943.89	00/00/00 00:00:00	06-MAY-11 10:26:28AM	048	03	000.0
00279	332	13.0296280000000	77.5630387000000	000943.89	00/00/00 00:00:00	06-MAY-11 10:27:07AM	048	03	000.0
00280	333	13.0296302000000	77.5631141000000	000944.61	00/00/00 00:00:00	06-MAY-11 10:27:26AM	048	03	000.0
00281	334	13.0292346000000	77.5631741000000	000944.61	00/00/00 00:00:00	06-MAY-11 10:32:46AM	048	03	000.0
00282	335	13.0293886000000	77.5626783000000	000944.13	00/00/00 00:00:00	06-MAY-11 12:01:26PM	048	03	000.0
00283	336	13.0289726000000	77.5627930000000	000944.37	00/00/00 00:00:00	06-MAY-11 12:03:57PM	048	03	000.0
00284	337	13.0298142000000	77.5632585000000	000944.13	00/00/00 00:00:00	06-MAY-11 12:08:13PM	048	03	000.0
00285	338	13.0295220000000	77.5636464000000	000946.78	00/00/00 00:00:00	06-MAY-11 12:11:37PM	048	03	000.0
00286	339	13.0297164000000	77.5633012000000	000946.54	00/00/00 00:00:00	06-MAY-11 12:15:56PM	048	03	000.0
00287	340	13.0298616000000	77.5633861000000	000946.54	00/00/00 00:00:00	06-MAY-11 12:17:00PM	048	03	000.0
00288	341	13.0292059000000	77.5640050000000	000931.64	00/00/00 00:00:00	07-MAY-11 2:43:52PM	048	03	000.0
00289	342	13.0292591000000	77.5630189000000	000934.04	00/00/00 00:00:00	07-MAY-11 2:46:04PM	048	03	000.0
00290	343	13.0292602000000	77.5630234000000	000931.88	00/00/00 00:00:00	07-MAY-11 2:46:26PM	048	03	000.0
00291	344	13.0293902000000	77.5630147000000	000932.36	00/00/00 00:00:00	07-MAY-11 2:47:09PM	048	03	000.0
00292	345	13.0294319000000	77.5630047000000	000931.16	00/00/00 00:00:00	07-MAY-11 2:47:37PM	048	03	000.0
00293	346	13.0294888000000	77.5630212000000	000934.76	00/00/00 00:00:00	07-MAY-11 2:48:13PM	048	03	000.0

00294	347	13.0299069000000	77.5633430000000	000932.60	00/00/00 00:00:00	07-MAY-11 2:54:42PM	048	03	000.0
00295	348	13.0298856000000	77.5633715000000	000932.36	00/00/00 00:00:00	07-MAY-11 2:55:08PM	048	03	000.0
00296	349	13.0298727000000	77.5633756000000	000933.56	00/00/00 00:00:00	07-MAY-11 2:55:21PM	048	03	000.0
00297	350	13.0298471000000	77.5634002000000	000933.08	00/00/00 00:00:00	07-MAY-11 2:55:38PM	048	03	000.0
00298	351	13.0298145000000	77.5634355000000	000932.60	00/00/00 00:00:00	07-MAY-11 2:55:52PM	048	03	000.0
00299	352	13.0297812000000	77.5634685000000	000934.28	00/00/00 00:00:00	07-MAY-11 2:56:14PM	048	03	000.0
00300	353	13.0297555000000	77.5634879000000	000933.80	00/00/00 00:00:00	07-MAY-11 2:56:30PM	048	03	000.0
00301	354	13.0292219000000	77.5626653000000	000934.76	00/00/00 00:00:00	07-MAY-11 3:02:09PM	048	03	000.0
00302	355	13.0289552000000	77.5635294000000	000926.59	00/00/00 00:00:00	10-MAY-11 11:07:11AM	048	03	000.0
00303	356	13.0293190000000	77.5625636000000	000930.19	00/00/00 00:00:00	10-MAY-11 11:20:50AM	048	03	000.0
00304	357	13.0291439000000	77.5625106000000	000930.92	00/00/00 00:00:00	10-MAY-11 11:23:21AM	048	03	000.0
00305	358	13.0293343000000	77.5625473000000	000931.40	00/00/00 00:00:00	10-MAY-11 11:25:34AM	048	03	000.0
00306	359	13.0290589000000	77.5644265000000	000953.51	00/00/00 00:00:00	10-MAY-11 5:18:54PM	048	03	000.0
00307	360	13.0292105000000	77.5643342000000	000949.66	00/00/00 00:00:00	10-MAY-11 5:27:16PM	048	03	000.0
00308	361	13.0295290000000	77.5638800000000	000944.61	00/00/00 00:00:00	10-MAY-11 5:33:37PM	048	03	000.0
00309	362	13.0296866000000	77.5631821000000	000943.41	00/00/00 00:00:00	10-MAY-11 5:36:37PM	048	03	000.0
00310	363	13.0294362000000	77.5629747000000	000943.65	00/00/00 00:00:00	10-MAY-11 5:38:51PM	048	03	000.0
00311	364	13.0292919000000	77.5625732000000	000943.89	00/00/00 00:00:00	10-MAY-11 5:41:08PM	048	03	000.0
00312	365	13.0291396000000	77.5630855000000	000943.41	00/00/00 00:00:00	10-MAY-11 5:42:54PM	048	03	000.0
00313	366	13.0289366000000	77.5635574000000	000941.97	00/00/00 00:00:00	10-MAY-11 5:49:15PM	048	03	000.0
00314	367	13.0291427000000	77.5638115000000	000939.09	00/00/00 00:00:00	12-MAY-11 3:57:20PM	048	03	000.0
00315	368	13.0292083000000	77.5639056000000	000940.05	00/00/00 00:00:00	12-MAY-11 3:58:35PM	048	03	000.0
00316	369	13.0291634000000	77.5638548000000	000940.29	00/00/00 00:00:00	12-MAY-11 3:59:16PM	048	03	000.0
00317	370	13.0292719000000	77.5638272000000	000920.58	00/00/00 00:00:00	21-MAY-11 1:05:56PM	048	03	000.0
00318	371	13.0291910000000	77.5638098000000	000920.82	00/00/00 00:00:00	21-MAY-11 1:06:17PM	048	03	000.0
00319	372	13.0292044000000	77.5638576000000	000921.06	00/00/00 00:00:00	21-MAY-11 1:06:35PM	048	03	000.0
00320	373	13.0292070000000	77.5638770000000	000920.58	00/00/00 00:00:00	21-MAY-11 1:06:48PM	048	03	000.0
00321	374	13.0291851000000	77.5639289000000	000921.30	00/00/00 00:00:00	21-MAY-11 1:07:15PM	048	03	000.0
00322	375	13.0292045000000	77.5638698000000	000921.54	00/00/00 00:00:00	21-MAY-11 1:07:45PM	048	03	000.0
00323	376	13.0290491000000	77.5639931000000	000921.78	00/00/00 00:00:00	21-MAY-11 1:08:28PM	048	03	000.0
00324	377	13.0291598000000	77.5634732000000	000921.78	00/00/00 00:00:00	21-MAY-11 1:10:25PM	048	03	000.0
00325	473	18.8679882000000	79.0592883000000	000217.86	00/00/00 00:00:00	25-jan-10 10:51:05am	221	03	000.0
00326	475	18.8681225000000	79.0593014000000	000219.30	00/00/00 00:00:00	25-jan-10 11:31:44am	221	03	000.0
00327	478	13.0295833000000	77.5629499000000	000921.54	00/00/00 00:00:00	09-JUN-11 4:38:02PM	048	03	000.0
00328	478 1	18.8675107000000	79.0591897000000	000220.27	00/00/00 00:00:00	25-jan-10 1:05:16pm	221	03	000.0
00329	479	18.8675065000000	79.0591601000000	000220.75	00/00/00 00:00:00	25-jan-10 1:12:24pm	221	03	000.0
00330	480	18.8681614000000	79.0591067000000	000225.31	00/00/00 00:00:00	11-JUN-11 8:39:51AM	048	03	000.0
00331	481	18.8625126000000	79.0143409000000	000221.71	00/00/00 00:00:00	11-JUN-11 10:09:44AM	048	03	000.0
00332	482	18.8767123000000	78.9166741000000	000263.28	00/00/00 00:00:00	11-JUN-11 11:24:29AM	048	03	000.0
00333	483	18.6983393000000	78.8106420000000	000376.96	00/00/00 00:00:00	11-JUN-11 4:41:22PM	048	03	000.0
00334	484	18.9362800000000	79.1449531000000	000173.40	00/00/00 00:00:00	12-JUN-11 9:19:01AM	048	03	000.0
00335	485	18.9365046000000	79.1453592000000	000170.52	00/00/00 00:00:00	12-JUN-11 9:37:59AM	048	03	000.0
00336	486	12.9968046000000	77.5746288000000	000873.00	00/00/00 00:00:00	14-JUN-11 8:28:09PM	048	03	000.0
00337	487	13.0294715000000	77.5629827000000	000939.33	00/00/00 00:00:00	19-JUN-11 9:56:53AM	048	03	000.0
00338	488	13.0294531000000	77.5630047000000	000942.21	00/00/00 00:00:00	19-JUN-11 9:58:34AM	048	03	000.0
00339	489	13.0293542000000	77.5629907000000	000941.97	00/00/00 00:00:00	19-JUN-11 9:59:07AM	048	03	000.0
00340	490	13.0293932000000	77.5629581000000	000946.06	00/00/00 00:00:00	19-JUN-11 9:59:54AM	048	03	000.0
00341	491	13.0293278000000	77.5630104000000	000942.21	00/00/00 00:00:00	19-JUN-11 10:02:42AM	048	03	000.0
00342	492	13.0293677000000	77.5629900000000	000942.21	00/00/00 00:00:00	19-JUN-11 10:04:01AM	048	03	000.0
00343	493	13.0295822000000	77.5630013000000	000941.49	00/00/00 00:00:00	19-JUN-11 10:04:50AM	048	03	000.0
00344	494	13.0296981000000	77.5631168000000	000941.25	00/00/00 00:00:00	19-JUN-11 10:05:57AM	048	03	000.0
00345	495	13.0297163000000	77.5632084000000	000940.53	00/00/00 00:00:00	19-JUN-11 10:07:57AM	048	03	000.0
00346	496	13.0297448000000	77.5631383000000	000941.01	00/00/00 00:00:00	19-JUN-11 10:08:38AM	048	03	000.0
00347	497	13.0298268000000	77.5632715000000	000939.81	00/00/00 00:00:00	19-JUN-11 10:09:39AM	048	03	000.0
00348	498	13.0298454000000	77.5633033000000	000940.05	00/00/00 00:00:00	19-JUN-11 10:10:35AM	048	03	000.0
00349	499	13.0295962000000	77.5631710000000	000940.29	00/00/00 00:00:00	19-JUN-11 10:13:07AM	048	03	000.0
00350	500	13.0295884000000	77.5631521000000	000940.29	00/00/00 00:00:00	19-JUN-11 10:13:26AM	048	03	000.0
00351	501	13.0295753000000	77.5631691000000	000940.29	00/00/00 00:00:00	19-JUN-11 10:13:56AM	048	03	000.0
00352	502	13.0293262000000	77.5631819000000	000940.53	00/00/00 00:00:00	19-JUN-11 10:15:19AM	048	03	000.0

00353	503	13.0293503000000	77.5631791000000	000939.57	00/00/00 00:00:00	19-JUN-11 10:16:25AM	048	03	000.0
00354	504	13.0292646000000	77.5632116000000	000939.81	00/00/00 00:00:00	19-JUN-11 10:17:17AM	048	03	000.0
00355	505	13.0292377000000	77.5631006000000	000938.37	00/00/00 00:00:00	19-JUN-11 10:18:24AM	048	03	000.0
00356	506	13.0292508000000	77.5628011000000	000938.37	00/00/00 00:00:00	19-JUN-11 10:20:07AM	048	03	000.0
00357	507	13.0293988000000	77.5626835000000	000938.61	00/00/00 00:00:00	19-JUN-11 10:20:59AM	048	03	000.0
00358	508	13.0293016000000	77.5627777000000	000937.64	00/00/00 00:00:00	19-JUN-11 10:21:35AM	048	03	000.0
00359	509	13.0293028000000	77.5626111000000	000938.13	00/00/00 00:00:00	19-JUN-11 10:23:09AM	048	03	000.0
00360	510	13.0292378000000	77.5625382000000	000937.64	00/00/00 00:00:00	19-JUN-11 10:23:58AM	048	03	000.0
00361	511	13.0292164000000	77.5625043000000	000937.16	00/00/00 00:00:00	19-JUN-11 10:25:30AM	048	03	000.0
00362	512	13.0292494000000	77.5626200000000	000936.68	00/00/00 00:00:00	19-JUN-11 10:26:15AM	048	03	000.0
00363	513	13.0291330000000	77.5624258000000	000936.44	00/00/00 00:00:00	19-JUN-11 10:28:20AM	048	03	000.0
00364	514	13.0290882000000	77.5624290000000	000936.68	00/00/00 00:00:00	19-JUN-11 10:28:37AM	048	03	000.0
00365	515	13.0290484000000	77.5624311000000	000935.96	00/00/00 00:00:00	19-JUN-11 10:28:55AM	048	03	000.0
00366	516	13.0288717000000	77.5624508000000	000936.44	00/00/00 00:00:00	19-JUN-11 10:29:50AM	048	03	000.0
00367	517	13.0288295000000	77.5624435000000	000936.44	00/00/00 00:00:00	19-JUN-11 10:30:32AM	048	03	000.0
00368	518	13.0288934000000	77.5624823000000	000936.20	00/00/00 00:00:00	19-JUN-11 10:31:26AM	048	03	000.0
00369	519	13.0287826000000	77.5624729000000	000936.44	00/00/00 00:00:00	19-JUN-11 10:31:45AM	048	03	000.0
00370	520	13.0288065000000	77.5624893000000	000936.44	00/00/00 00:00:00	19-JUN-11 10:32:02AM	048	03	000.0
00371	521	13.0288167000000	77.5625468000000	000936.44	00/00/00 00:00:00	19-JUN-11 10:32:25AM	048	03	000.0
00372	522	13.0288655000000	77.5625714000000	000936.20	00/00/00 00:00:00	19-JUN-11 10:32:57AM	048	03	000.0
00373	523	13.0290721000000	77.5628019000000	000936.68	00/00/00 00:00:00	19-JUN-11 10:34:05AM	048	03	000.0
00374	524	13.0290311000000	77.5628140000000	000936.20	00/00/00 00:00:00	19-JUN-11 10:35:26AM	048	03	000.0
00375	525	13.0289895000000	77.5628158000000	000935.24	00/00/00 00:00:00	19-JUN-11 10:36:15AM	048	03	000.0
00376	526	13.0289299000000	77.5629037000000	000935.24	00/00/00 00:00:00	19-JUN-11 10:37:19AM	048	03	000.0
00377	527	13.0289206000000	77.5629424000000	000935.72	00/00/00 00:00:00	19-JUN-11 10:37:46AM	048	03	000.0
00378	528	13.0289187000000	77.5629548000000	000935.72	00/00/00 00:00:00	19-JUN-11 10:38:01AM	048	03	000.0
00379	529	13.0288903000000	77.5629721000000	000936.20	00/00/00 00:00:00	19-JUN-11 10:38:50AM	048	03	000.0
00380	530	13.0288883000000	77.5629474000000	000936.20	00/00/00 00:00:00	19-JUN-11 10:39:15AM	048	03	000.0
00381	531	13.0288031000000	77.5632657000000	000936.44	00/00/00 00:00:00	19-JUN-11 10:41:54AM	048	03	000.0
00382	532	13.0288965000000	77.5634090000000	000936.20	00/00/00 00:00:00	19-JUN-11 10:43:05AM	048	03	000.0
00383	533	13.0288562000000	77.5640481000000	000937.40	00/00/00 00:00:00	19-JUN-11 10:47:40AM	048	03	000.0
00384	534	13.0288530000000	77.5640738000000	000936.20	00/00/00 00:00:00	19-JUN-11 10:48:12AM	048	03	000.0
00385	535	13.0288746000000	77.5641060000000	000936.92	00/00/00 00:00:00	19-JUN-11 10:48:36AM	048	03	000.0
00386	536	13.0288891000000	77.5641703000000	000936.92	00/00/00 00:00:00	19-JUN-11 10:49:11AM	048	03	000.0
00387	537	13.0289707000000	77.5643080000000	000936.92	00/00/00 00:00:00	19-JUN-11 10:50:24AM	048	03	000.0
00388	538	13.0288901000000	77.5644976000000	000936.68	00/00/00 00:00:00	19-JUN-11 10:51:18AM	048	03	000.0
00389	539	13.0288741000000	77.5645474000000	000936.68	00/00/00 00:00:00	19-JUN-11 10:51:47AM	048	03	000.0
00390	540	13.0289170000000	77.5645643000000	000937.16	00/00/00 00:00:00	19-JUN-11 10:52:12AM	048	03	000.0
00391	541	13.0290074000000	77.5645608000000	000936.20	00/00/00 00:00:00	19-JUN-11 10:52:52AM	048	03	000.0
00392	542	13.0290022000000	77.5645830000000	000936.68	00/00/00 00:00:00	19-JUN-11 10:53:06AM	048	03	000.0
00393	543	13.0289980000000	77.5645891000000	000936.92	00/00/00 00:00:00	19-JUN-11 10:53:15AM	048	03	000.0
00394	544	13.0289921000000	77.5645780000000	000936.92	00/00/00 00:00:00	19-JUN-11 10:53:23AM	048	03	000.0
00395	545	13.0290282000000	77.5645424000000	000937.16	00/00/00 00:00:00	19-JUN-11 10:53:41AM	048	03	000.0
00396	546	13.0291010000000	77.5645679000000	000936.68	00/00/00 00:00:00	19-JUN-11 10:54:02AM	048	03	000.0
00397	547	13.0291075000000	77.5645995000000	000936.68	00/00/00 00:00:00	19-JUN-11 10:54:32AM	048	03	000.0
00398	548	13.0291191000000	77.5645814000000	000936.44	00/00/00 00:00:00	19-JUN-11 10:54:49AM	048	03	000.0
00399	549	13.0292197000000	77.5646070000000	000935.72	00/00/00 00:00:00	19-JUN-11 10:55:28AM	048	03	000.0
00400	550	13.0292883000000	77.5645758000000	000935.96	00/00/00 00:00:00	19-JUN-11 10:56:24AM	048	03	000.0
00401	551	13.0293640000000	77.5645742000000	000935.72	00/00/00 00:00:00	19-JUN-11 10:57:07AM	048	03	000.0
00402	552	13.0293996000000	77.5645941000000	000935.24	00/00/00 00:00:00	19-JUN-11 10:57:22AM	048	03	000.0
00403	553	13.0294942000000	77.5644738000000	000934.76	00/00/00 00:00:00	19-JUN-11 10:58:07AM	048	03	000.0
00404	554	13.0295155000000	77.5644202000000	000934.76	00/00/00 00:00:00	19-JUN-11 10:58:56AM	048	03	000.0
00405	555	13.0295614000000	77.5643336000000	000934.52	00/00/00 00:00:00	19-JUN-11 11:00:00AM	048	03	000.0
00406	556	13.0296298000000	77.5641861000000	000935.24	00/00/00 00:00:00	19-JUN-11 11:00:47AM	048	03	000.0
00407	557	13.0296490000000	77.5641438000000	000935.72	00/00/00 00:00:00	19-JUN-11 11:01:18AM	048	03	000.0
00408	558	13.0296704000000	77.5640745000000	000934.28	00/00/00 00:00:00	19-JUN-11 11:01:53AM	048	03	000.0
00409	559	13.0297437000000	77.5640314000000	000933.80	00/00/00 00:00:00	19-JUN-11 11:02:25AM	048	03	000.0
00410	560	13.0296736000000	77.5636956000000	000933.08	00/00/00 00:00:00	19-JUN-11 11:03:28AM	048	03	000.0
00411	561	13.0296117000000	77.5637194000000	000935.00	00/00/00 00:00:00	19-JUN-11 11:03:44AM	048	03	000.0

00412	562	13.0299147000000	77.5633263000000	000932.84	00/00/00 00:00:00	19-JUN-11 11:05:24AM	048	03	000.0
00413	563	13.0299330000000	77.5634112000000	000932.84	00/00/00 00:00:00	19-JUN-11 11:06:04AM	048	03	000.0
00414	564	13.0298873000000	77.5634098000000	000934.28	00/00/00 00:00:00	19-JUN-11 11:06:21AM	048	03	000.0
00415	565	13.0298619000000	77.5634990000000	000933.32	00/00/00 00:00:00	19-JUN-11 11:06:55AM	048	03	000.0
00416	566	13.0298719000000	77.5635383000000	000933.32	00/00/00 00:00:00	19-JUN-11 11:07:14AM	048	03	000.0
00417	567	13.0297369000000	77.5633194000000	000933.08	00/00/00 00:00:00	19-JUN-11 11:08:02AM	048	03	000.0
00418	568	13.0292972000000	77.5636734000000	000934.28	00/00/00 00:00:00	19-JUN-11 11:09:56AM	048	03	000.0
00419	569	13.0294524000000	77.5636684000000	000933.80	00/00/00 00:00:00	19-JUN-11 11:10:30AM	048	03	000.0
00420	571	13.0291996000000	77.5630138000000	000938.13	00/00/00 00:00:00	22-JUL-11 4:53:56PM	048	03	000.0
00421	572	13.0292045000000	77.5629986000000	000938.61	00/00/00 00:00:00	22-JUL-11 4:54:50PM	048	03	000.0
00422	573	13.0293058000000	77.5632424000000	000938.13	00/00/00 00:00:00	22-JUL-11 4:56:10PM	048	03	000.0
00423	574	13.0294449000000	77.5633562000000	000937.40	00/00/00 00:00:00	22-JUL-11 4:57:56PM	048	03	000.0
00424	575	13.0294118000000	77.5633436000000	000937.64	00/00/00 00:00:00	22-JUL-11 4:58:34PM	048	03	000.0
00425	577	13.0295594000000	77.5633471000000	000936.92	00/00/00 00:00:00	22-JUL-11 5:00:11PM	048	03	000.0
00426	578	13.0295565000000	77.5632476000000	000937.40	00/00/00 00:00:00	22-JUL-11 5:01:05PM	048	03	000.0
00427	579	13.0294694000000	77.5629114000000	000935.96	00/00/00 00:00:00	22-JUL-11 5:04:09PM	048	03	000.0
00428	580	13.0294376000000	77.5628549000000	000935.24	00/00/00 00:00:00	22-JUL-11 5:04:34PM	048	03	000.0
00429	581	13.0293198000000	77.5628811000000	000935.96	00/00/00 00:00:00	22-JUL-11 5:05:12PM	048	03	000.0
00430	582	13.0290913000000	77.5628129000000	000936.44	00/00/00 00:00:00	22-JUL-11 5:06:00PM	048	03	000.0
00431	583	13.0291660000000	77.5628124000000	000935.96	00/00/00 00:00:00	22-JUL-11 5:06:30PM	048	03	000.0
00432	584	13.0289120000000	77.5627873000000	000935.72	00/00/00 00:00:00	22-JUL-11 5:09:50PM	048	03	000.0
00433	585	13.0288932000000	77.5628197000000	000935.72	00/00/00 00:00:00	22-JUL-11 5:10:11PM	048	03	000.0
00434	586	13.0288738000000	77.5630675000000	000936.44	00/00/00 00:00:00	22-JUL-11 5:13:06PM	048	03	000.0
00435	587	13.0289591000000	77.5640691000000	000936.92	00/00/00 00:00:00	22-JUL-11 5:17:54PM	048	03	000.0
00436	588	13.0290966000000	77.5640956000000	000937.16	00/00/00 00:00:00	22-JUL-11 5:18:27PM	048	03	000.0
00437	589	13.0291025000000	77.5640078000000	000936.92	00/00/00 00:00:00	22-JUL-11 5:19:32PM	048	03	000.0
00438	590	13.0292416000000	77.5637395000000	000936.20	00/00/00 00:00:00	22-JUL-11 5:21:05PM	048	03	000.0
00439	591	13.0292843000000	77.5637078000000	000935.96	00/00/00 00:00:00	22-JUL-11 5:22:09PM	048	03	000.0
00440	592	13.0291113000000	77.5637765000000	000936.20	00/00/00 00:00:00	22-JUL-11 5:23:41PM	048	03	000.0
00441	593	13.0291771000000	77.5637210000000	000936.20	00/00/00 00:00:00	22-JUL-11 5:24:22PM	048	03	000.0
00442	594	13.0291400000000	77.5636858000000	000936.20	00/00/00 00:00:00	22-JUL-11 5:24:59PM	048	03	000.0
00443	595	13.0291403000000	77.5637375000000	000935.72	00/00/00 00:00:00	22-JUL-11 5:25:26PM	048	03	000.0
00444	596	13.0292308000000	77.5636882000000	000935.96	00/00/00 00:00:00	22-JUL-11 5:26:01PM	048	03	000.0
00445	597	13.0292264000000	77.5637371000000	000936.20	00/00/00 00:00:00	22-JUL-11 5:26:20PM	048	03	000.0
00446	598	13.0291448000000	77.5633805000000	000935.72	00/00/00 00:00:00	22-JUL-11 5:28:46PM	048	03	000.0
00447	599	13.0291487000000	77.5633338000000	000935.24	00/00/00 00:00:00	22-JUL-11 5:29:46PM	048	03	000.0
00448	600	13.0292596000000	77.5633488000000	000934.52	00/00/00 00:00:00	22-JUL-11 5:30:52PM	048	03	000.0
00449	601	13.0294381000000	77.5632531000000	000934.76	00/00/00 00:00:00	22-JUL-11 5:32:08PM	048	03	000.0
00450	602	13.0294349000000	77.5632259000000	000933.56	00/00/00 00:00:00	22-JUL-11 5:32:28PM	048	03	000.0
00451	603	13.0292260000000	77.5627611000000	000933.56	00/00/00 00:00:00	22-JUL-11 5:35:53PM	048	03	000.0
00452	604	13.0288458000000	77.5628265000000	000933.80	00/00/00 00:00:00	22-JUL-11 5:38:07PM	048	03	000.0
00453	605	13.0288561000000	77.5630353000000	000935.48	00/00/00 00:00:00	22-JUL-11 5:38:53PM	048	03	000.0
00454	606	13.0288471000000	77.5630388000000	000935.00	00/00/00 00:00:00	22-JUL-11 5:39:52PM	048	03	000.0
00455	607	13.0294417000000	77.5629861000000	000934.52	00/00/00 00:00:00	22-JUL-11 5:46:56PM	048	03	000.0
00456	608	13.0288961000000	77.5625354000000	000934.76	00/00/00 00:00:00	22-JUL-11 5:53:55PM	048	03	000.0
00457	609	13.0292858000000	77.5635057000000	000923.95	00/00/00 00:00:00	14-OCT-11 11:31:28AM	048	03	000.0
00458	610	13.0295066000000	77.5633963000000	000924.43	00/00/00 00:00:00	14-OCT-11 11:32:42AM	048	03	000.0
00459	611	13.0296414000000	77.5634378000000	000924.91	00/00/00 00:00:00	14-OCT-11 11:33:21AM	048	03	000.0
00460	612	13.0292845000000	77.5639663000000	000926.59	00/00/00 00:00:00	14-OCT-11 11:35:32AM	048	03	000.0
00461	613	13.0291972000000	77.5640738000000	000927.31	00/00/00 00:00:00	14-OCT-11 11:36:46AM	048	03	000.0
00462	614	13.0296631000000	77.5633067000000	000927.55	00/00/00 00:00:00	14-OCT-11 11:39:55AM	048	03	000.0
00463	615	13.0296790000000	77.5632228000000	000928.27	00/00/00 00:00:00	14-OCT-11 11:40:52AM	048	03	000.0
00464	616	13.0292478000000	77.5630142000000	000929.23	00/00/00 00:00:00	14-OCT-11 11:42:58AM	048	03	000.0
00465	617	13.0292456000000	77.5630718000000	000929.95	00/00/00 00:00:00	14-OCT-11 11:43:14AM	048	03	000.0
00466	618	13.0293054000000	77.5635545000000	000931.88	00/00/00 00:00:00	14-OCT-11 11:45:36AM	048	03	000.0
00467	619	13.0294247000000	77.5642359000000	000932.84	00/00/00 00:00:00	14-OCT-11 11:48:12AM	048	03	000.0
00468	620	13.0294086000000	77.5643241000000	000934.04	00/00/00 00:00:00	14-OCT-11 11:49:39AM	048	03	000.0
00469	621	13.0296273000000	77.5636891000000	000934.76	00/00/00 00:00:00	14-OCT-11 11:55:10AM	048	03	000.0
00470	622	13.0297638000000	77.5631969000000	000935.24	00/00/00 00:00:00	16-OCT-11 12:05:55PM	048	03	000.0

00471	623	13.0296986000000	77.5632831000000	000935.48	00/00/00 00:00:00	16-OCT-11 12:07:03PM	048	03	000.0
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